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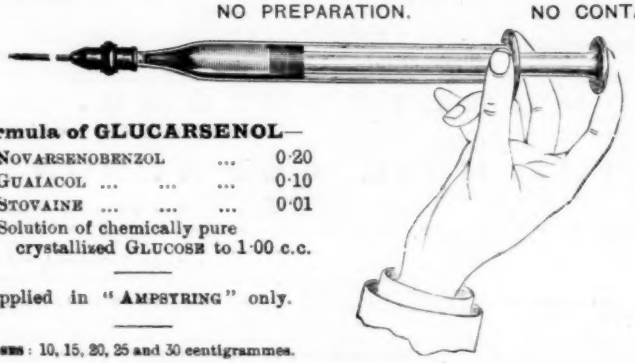

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A Lecture

ON

THE SURGICAL TREATMENT OF PROLAPSE OF THE UTERUS AND VAGINA.

Delivered at the Royal Society of Medicine on May 5th, 1920,

BY W. BLAIR BELL, B.S., M.D. LOND., &C.,
GYNÆCOLOGICAL SURGEON TO THE ROYAL INFIRMARY, AND LECTURER ON CLINICAL GYNÆCOLOGY IN THE UNIVERSITY, LIVERPOOL.

INTRODUCTION.

IT is somewhat surprising that, when so much is being said and written about the care of the pregnant women and the safe conduct of parturition, so little attention has been directed at the same time—publicly, at any rate—to the prophylaxis and treatment of prolapse, a gynæcological condition which is almost invariably a sequel of parturition, and which is so common that Fothergill has stated that "plastic vaginal work thus forms, roughly, a fourth part of the whole operative work done" (at St. Mary's Hospital, Manchester). Moreover, the condition is so disabling that a large proportion of those women who suffer with prolapse of the uterus and vagina are physically incapable of performing their household duties. Yet the subject has not been neglected by gynæcologists, many of whom have gone down to posterity with their names appended to pessaries; indeed, at the present time there is probably no subject in gynæcological surgery to which gynæcologists have given more consideration than to the surgical treatment of prolapse. I shall not attempt to dogmatise, as so many have done, for I hope to show that the question is one that requires the exercise of judgment, and that the constantly recurring assertion, "the one and only way to cure prolapse," should represent at best only a method of choice in certain given circumstances. It is the attitude, adopted by so many who assert that some particular method as practised by them is the best, the only, way to cure prolapse, that has led to the diversity of opinions and methods now set forth, and, I regret to add, to the disappointment of many a patient.

The fact that a number of cases on which I have myself operated had previously been subjected—once, twice, up to five times—to the procedures advocated by the surgeons performing the operations, makes me feel somewhat reticent about the methods I practise: perhaps some may know of failures of mine. In this case, I hope to be informed, that I may benefit by the experience, if I have not already done so. We learn only by our failures, and, lacking these, by the failures of others. Having said this, I hope I may be forgiven for illustrating (Figs. 1 and 2) two of many of the post-operative failures that have come under my notice. I may say that the operators concerned are gynæcologists of repute who are interested in the subject, and that the cases illustrated have come under my care during the last two years—facts which will, I think, lend force to my statements, and prove convincingly that neither in opinion nor practice have we reached finality.

Nevertheless, whatever real (I shall explain what I mean by "real" later) failures there may be following my own operations—and, unfortunately, perhaps, I do not known of any—and the procedures of others, I believe that to-day it is possible practically to guarantee the cure of any prolapse whatsoever, not by one method, but rather by the method or combination of methods suitable to each particular case. I do not deny, however, that many cases can be cured by almost any method; and it is this very fact that blinds those who are satisfied with less than 99 per cent. of cures.

I am only concerned here with the surgical treatment of prolapse of the uterus and vagina, but it goes without saying that much can be accomplished in the way of prophylaxis, and that all surgical procedures are based on a correct appreciation of the normal anatomical conditions and on the lesions present in prolapse. The operations practised should aim at a correction of the lesion or lesions, or at the best possible compromise; and as the lesions vary with a corresponding variation in the clinical picture, the procedures must vary accordingly. Hence, it is that no one operation meets all the requirements in regard to surgical treatment of every case.

The total number of cases of prolapse on which I have operated is not large, approximately 400 in all, with (so far as I know the cases are being investigated at present) 99 per cent. of cures, and a mortality of 2, or 0·5 per cent. The operative treatment adopted was only indirectly concerned with these two deaths, as I shall show presently.

CLINICAL TYPES OF PROLAPSE.

The following states, which may be encountered in varying degrees of severity, present themselves for consideration:—

A. So-called "congenital" prolapse.

B. Puerperal retroversion and flexion, with slight actual, or with potential, descent.

C. Vaginal prolapse.

D. Prolapse of the uterus and vagina: (1) during the reproductive period; (2) after the reproductive period.

In discussing the procedures which, in my opinion, should be practised in the different states recorded above, I shall describe my present practice which has naturally been more or less gradually evolved, although long ago it had reached a state of comparative stability.

"Congenital" Prolapse.

It must be mentioned that what is usually called "congenital" prolapse is not the condition sometimes seen in infants with spina bifida, but the prolapse that occurs soon after puberty, and is no doubt primarily due to inherent defects in the pelvic floor. I think there can be no doubt that this condition in its advanced stage is usually considered to be the most difficult of all forms of prolapse to treat effectually. It is not common, and must, of course, be distinguished from congenital hypertrophy of the vaginal cervix. I have only treated some half-dozen cases of these so-called "congenital" prolapses. Two of the cases on which I have operated had previously been submitted to operation. One had had colporrhaphies and perineorrhaphies performed on two occasions; and the other case had actually undergone five operations; four times plastic vaginal work had been done, and last of all ventrisuspension (peritoneal adhesion) had been tried.

In Fig. 1 the result of these five operations a few months later is shown. I had this photograph taken simply and solely because the surgeon who had performed these five operations has very strong opinions about the cure of prolapse. Moreover, it is instructive, in that it shows plainly—as did the other case of a similar nature—that no surgeon, however skilful with his particular methods of plastic work on the vagina he may be, can cure these cases of congenital procidentia by such work alone, nor will superadded ventrisuspension help in the cure. This patient has now been cured at one sitting by what I consider to be the correct procedures. First, effective plastic work on the vagina was performed, together with amputation of the cervix. Next, the abdomen was opened and a string-like band some 6 inches in length, representing the remains of the peritoneal fixation, was excised. The posterior segment of the peritoneal aspect of the pelvic floor was then reconstructed—an essential procedure—and the uterus was suspended by means of a modified Gilliam's operation. The result has been perfect.

I shall deal with the technique of all these procedures later.

In the other case, on which two vaginal operations had been performed on two occasions by another gynæcologist, I was able to cure at one sitting the "congenital" procidentia by almost similar procedures; and, when examined recently, after an interval of 12 years, the result was found to be so good that it would be impossible, if it were not for the slight laparotomy scar, for anyone to know that an operation had been performed, or that the woman had ever been other than normal. She has never married, so the test of child-bearing has not occurred.

Puerperal Retroflexion.

I believe that puerperal retroflexion is in the first stage of a large majority of all cases of acquired prolapse of the uterus, and should be treated as such. In those cases in which the vagina is not stretched or torn a timely operation to cure the condition will save much operative work in the

future. I have described elsewhere[1] the non-operative treatment of those cases of puerperal retroversion that are discovered during the puerperium. Unfortunately they are frequently overlooked, and at a later date operative treatment alone will effect a cure. If there be vaginal laceration this, of course, must receive attention; but when the retroflexion is the only important lesion—and it may be associated, when discovered, with slight descent—it is sufficient to perform a modified Gilliam's operation alone. I find I have carried out this procedure 135 times in this class of case with excellent results and no mortality. It must be remembered, nevertheless, that in subsequent labours vaginal laceration may occur and necessitate further operative treatment; but, provided this is not too long delayed and a vaginal prolapse has not stretched the supravaginal cervix, the uterus will always, no matter how many may be the subsequent labours, maintain the good position that results from a properly performed modified Gilliam's operation.

Vaginal Prolapse.

As has been so well emphasised by Fothergill, but overlooked by many, it is possible to have vaginal prolapse in association with a normally-placed uterus. In most cases the vaginal prolapse is represented by a large cystocele, more rarely by a rectocele, and still more rarely by a cystocele and rectocele. It must not be forgotten, however, that it is practically impossible for a vaginal prolapse to exist indefinitely without the supravaginal cervix being stretched, and prolapse of the uterus being produced, unless there be pelvic infection or some other pathological cause preventing the descent of the vaginal fornices.

If there be prolapse of the vagina alone, it is obvious that only plastic operations on the vagina will be required.

I find that I have carried out vaginal repair alone only in 16 cases; and, as in over half of these cases operations, including Gilliam's operation and ventrifixation, had been previously performed by other surgeons, and as in three it was necessary to perform vaginal hysterectomy, it will be seen there were but few uncomplicated cases in which I considered vaginal repair alone to be justifiable. Moreover, in 20 other cases vaginal repair was associated with laparotomy for the treatment of other lesions, such as fibromyomata of the uterus and pelvic infections.

It will be obvious from these statements how rarely I have felt justified in resorting to colporrhaphies and perineorrhaphies alone, in order to cure prolapse; in other words, how comparatively rare is purely vaginal prolapse. Yet, the Manchester School asserts that it is possible to cure every case of prolapse by means of plastic vaginal work. As I shall demonstrate directly, my method of plastic vaginal work is probably more efficient than the usual procedures practised, but I am certain that it is impossible to obtain good results by vaginal plastic work alone, however good, in bad cases of prolapse. Moreover, even if one had not the evidence of facts, such contradictory statements as the following would shake one's faith in the methods advocated: "If the patient were to come back a year after operation (that is, after plastic vaginal work) with a retroverted uterus, backache, pain in the side, or dyspareunia due to prolapsed ovaries, it would no doubt be proper to open the abdomen and sling the uterus in anteversion by a Webster's or a Gilliam's operation. But this would be operating for retroversion, not for prolapse"[2]; and, in discussing "Classical Prolapse. Prolapsus Uteri, Stage 1," a few pages earlier: "Thus, when the patient strains there is not only cystocele, but also retroversion."[3] Readers must draw their own conclusions; but it seems to me that if retroversion be stated to be, as indeed it is, present as a feature in the first stage of uterine prolapse, the other statement which I have quoted above regarding treatment is more than illogical. However, to come down once more to facts: Fig. 2 is a photograph of a patient who had "classical prolapse"—procidentia. Twice plastic operations on the vagina were carried out, and last of all ventrifixation had been performed. This patient is now under treatment, and I hope she will be cured.

Nevertheless, as already stated, vaginal prolapse alone with an anteflexed uterus may occur, but it is rarer than might be supposed, because the ultimate result of vaginal prolapse is to produce uterine prolapse. When, however, the patient is seen with vaginal prolapse alone—cystocele or rectocele or both together—then properly performed plastic vaginal work is all that is required to effect a cure.

Prolapse of the Uterus and Vagina.

This state may exist in all degrees; there may be slight descent of both uterus and vagina; the vagina may be badly prolapsed and the uterus but slightly; the uterus may be much prolapsed and the vagina but a little; or the uterus and vagina may be completely prolapsed—procidentia. Now the treatment of these conditions—and we may include the so-called "congenital" prolapse to which reference has already been made, for the treatment is much the same—would be easy and hardly worth discussing if vaginal plastic work was all that was necessary to effect a cure. I have shown two instances out of not a few that have come under my care, in which plastic work on the vagina performed by two different operators failed to cure, and in which even the last resort of a baffled mind—ventrifixation—also failed to relieve in either case.

I have performed this combination of vaginal repair with ventrifixation myself—once, and once only—and that many years ago. I believe the result in that case was satisfactory, but even then I was not convinced that it was the right treatment. It was one of those cases that almost any method will cure. The evidence of some 20 to 30 cases in which I have operated after others had performed ventrifixation has convinced me that, allowing for perfect technique on the part of the operator, the operation is a thoroughly bad one. I have discovered bands many inches in length and of the same thickness as that of string; I have found a uterus free and completely prolapsed, with no adhesions at all; I have had to perform vaginal hysterectomy, and in two cases during the procedure to dig a uterus firmly adherent to the anterior abdominal parietes out of a mass of intestinal adhesions. In one of these cases the uterus measured internally no less than 6½ inches. The cervix presented at the vaginal orifice and the vagina was badly prolapsed. Fig. 3 is a photograph of this interesting specimen. This patient, I am sorry to say, died of peritonitis, probably owing to some bowel being partially stripped of its muscular coat during the separation of the adhesions. But this death must really be attributed to the imperfect procedures previously practised—procedures which not only failed to relieve the patient of the condition from which she was suffering, but even caused serious intestinal complications.

What operations, then, should be performed in these cases? It seems to me that there are really only two classes into which we can divide cases of prolapse of the uterus and vagina in regard to surgical treatment: (*a*) prolapse during the reproductive period; (*b*) prolapse after or about the menopause.

Prolapse of the Vagina and Uterus Before the Menopause.

In prolapse of the vagina and uterus before the menopause, and included in this category are the cases of so-called "congenital" prolapse, we must perform procedures compatible with subsequent parturition. Any operation that is incompatible must be ruled out of court.

For this reason the "interposition" operation, to be mentioned directly, must not be performed during the ordinary reproductive period; nor should ventrifixation be a procedure practised, as many difficulties and accidents have occurred during parturition after this operation. In connexion with this procedure it may be instructive to record the case of a young lady who consulted me a few months ago. She had been subjected to operation by a gynæcologist who had indulged in some ineffective plastic operation on the vagina and performed ventrifixation. He then told her that, owing to this operation, she must never become pregnant again, but in spite of this warning she conceived. It seems hardly credible that, on being consulted about the matter, the surgeon advised, and carried out, evacuation of the uterus! Such a case requires no comment, but I feel I should be lacking in scientific duty if I were to suppress such facts.

Peritoneal ventrisuspension is a useless operation; either the adhesion disappears or a long, narrow, dangerous band is produced, which, of course, is of no use for supporting the uterus subsequently.

What, then, can we do with safety and efficiency for the cases in question? We must repair the vagina and perineum, amputate or repair the vaginal cervix if necessary, and suspend the uterus by a modified Gilliam's operation. In bad prolapse—procidentia and especially in so-called "congenital" prolapse—we must also repair, or, rather, reconstruct, the peritoneal aspect of the posterior segment of the floor of the pelvis. I have performed 178 such combined operations with one death, due to a gauze pack, which I then used, being left by mistake in the vagina for ten days by the sister in charge. The patient eventually died of sepsis.

It is, of course, possible that the repaired vagina and perineum may suffer injury in subsequent confinements, but this is by no means invariable. I remember one woman, well under 30 years of age, on whom I operated for procidentia following her first confinement. Subsequently she had six children. She was confined in hospital with the first two following the operation, and she suffered no damage. Other confinements took place in her home, and when she came to see me about a year ago she was pregnant, and there was appreciable bulging of the vagina, with laceration of the perineum. She then had a difficult labour, and one of my colleagues delivered her—a very small woman—of a child

[1] The Principles of Gynæcology, 1919, third edition, p. 195 et seq.
[2] Fothergill, W. E.: New System of Gynæcology, 1917, ii., 657.
[3] Fothergill, W. E.: New System of Gynæcology, 1917, ii., 628.

weighing over 11 lb. with forceps. She was rather badly torn. After a few months I repaired the vagina and perineum. The uterus was still in a normal position.

One cannot, of course, look upon such a case as a failure. The original procedure cured her, and, indeed, survived the test of subsequent labours. But, as in a first confinement the vagina and perineum may be torn, so also may an effective vaginal repair suffer damage in subsequent labours. Such cases cannot be considered operative failures. In the cases I have illustrated in this paper, and in those which I have considered failures when they have come under observation after having previously had operations performed upon them, no conception had occurred subsequently to the operation that had not proved successful.

FIG. 1.—Complete procidentia in a case of "congenital" prolapse, subsequently to five operations. A scar can be seen on the anterior vaginal wall.

Prolapse of Vagina and Uterus at or after the Menopause.

In patients past the reproductive period—and by that I mean in women who have passed the menopause or who, having had children many years previously, are within a few years of the menopause—one is not limited by considerations of subsequent pregnancy. In these circumstances I seldom now open the abdomen. A majority of the cases are bad ones—that is to say, procidentia is often seen and the vagina may be ulcerated. After suitable preparation, if there is no descent of the uterus, vaginal repair alone, as we have seen, may be carried out; but when there is any degree of descent, and especially in the presence of a cystocele—extremely common in this class of case—I believe there is no operation to compare with the interposition operation, together with properly performed colporrhaphies, anterior and posterior, and perineorrhaphy.

In a few exceptional cases—I have one under my care at the moment, not included in my figures—it may be necessary also to open the abdomen to reconstruct the posterior segment floor of the pelvis from above.

I have performed the interposition operation with colporrhaphies and perineorrhaphies 42 times up to the date at which my figures have been collected. I have had no deaths or untoward symptoms, except in one case, in which frequency of micturition was caused by insufficient separation of the bladder—a state of affairs which was subsequently easily rectified through a laparotomy incision.

Surely, if there were any inherent and unavoidable reason why these operations for interposition of the uterus should eventuate in such terrible results as have been depicted, I could not have failed to have encountered it in some fifty or more experiences. My cases have almost invariably made a smooth recovery. In only three has there been any trouble, and in two this was in connexion with the perineum, and was of quite a minor character; in the other, in which the patient was found to have a recently-contracted gonorrhœal infection of the tubes—a lesion dealt with at the operation—there was a somewhat purulent vaginal discharge; this, however, did not interfere with the perfect operation-result obtained.

FIG. 3.—Greatly elongated uterus in case of prolapse subsequently to fixation and vaginal repair.

Schauta, to whom the introduction of this operation is attributed, lost five cases in 89 operations, and in 13 cases there were recurrences. Fothergill,[4] commenting on these figures, justly remarks that "no results could be much worse than these." Bissell has reported an almost incredible mortality of 75 per cent., while Vineburg[5] states that "I abandoned it (interposition operation) myself on account of the extensive suppuration usually accompanying it."

FIG. 2.—Prolapse of the uterus and vagina subsequent to three operations.

Such a record is undoubtedly appalling, but so was the record of the first ovariotomies. The awful results reported in regard to the interposition operation have been due to the same cause as that which threw such a lurid light on the early ovariotomies—sepsis!

Of course, if simple plastic work on the vagina cured all cases of prolapse there would be no need to do more. But I firmly deny that it does so, and I have adduced pictorial evidence in support of my denial—evidence to which I can add if necessary. I know that such measures are ineffective except in the instances specified, even in the hands of those who advocate them. This being the case, what is to be done? I maintain that the interposition operation, if it can be done safely and effectually—as it can—in conjunction with colporrhaphies and perineorrhaphies, should be the method of choice after the menopause. Fifty deaths and no recurrences with smooth recoveries and perfect ultimate comfort to the patient is convincing to me. But, of course, if it cannot be done safely, it should not be attempted.

OPERATIVE PROCEDURES FOR PROLAPSE.

Abdominal Operations.

With regard to the operative procedures for the cure of prolapse we have seen that when there is a puerperal retroflexion of the uterus with slight or potential descent, but without vaginal laceration, a properly performed modified Gilliam's operation meets the case; indeed, the operation must in these circumstances be

[4] Fothergill, W. E., New System of Gynecology, 1917, ii., 654.

[5] Vineburg, H. N., Amer. Journ. Obstet. and Gynecol., 1919, lxxix., 677.

regarded as valuable prophylactic treatment against further prolapse, apart from the relief afforded to the symptoms connected with the condition so treated.

Modified Gilliam's operation.—I have described my modification of this operation, and have illustrated the different steps of the procedure in the third edition of my Principles of Gynæcology. This is, in my opinion, the only satisfactory method of suspension of the uterus, whether it be practised alone or in conjunction with plastic work on the vagina. I think the chief reasons why it is so satisfactory are that it is mechanically efficient, and that if pregnancy occurs subsequently the round ligaments hypertrophy, as always in this physiological state, and undergo involution afterwards. This sequence of events is, of course, in great contrast with what occurs after peritoneal ventrisuspension and ventrifixation in connexion with subsequent pregnancy. Apart from the other disadvantages of these two methods, pregnancy in the first case leads to stretching of the peritoneal adhesion, which is subsequently useless so far as support of the uterus is concerned, while ventrifixation prevents the proper development of the pregnant uterus and is a danger in parturition.

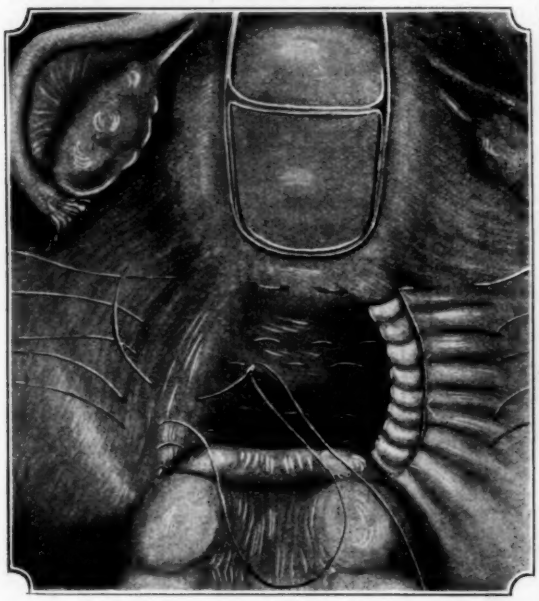

FIG. 4.—Early stages of author's method of reconstructing posterior segment of pelvic floor.

Reconstruction of posterior segment of pelvic floor.—The other intra-abdominal procedure for the relief of prolapse that I have mentioned is the reconstruction of the posterior segment of the peritoneal aspect of the pelvic floor.

For some time I contented myself with reconstruction of the utero-sacral ligaments. These so-called ligaments contain involuntary muscle-fibres which, like those of the round ligaments, are directly continuous with the external muscle-coat of the uterus; they form, too, the posterior part of the antero-posterior sling of muscle-fibres attached to the back and front of the supravaginal cervix, which stretches from the sacrum to the symphysis, being continued in front of the uterus between the base of the bladder and the anterior vaginal walls. We shall see directly that the anterior portion must also receive attention from the operator in cases of prolapse. I have depicted in my work on Gynæcology, just mentioned, a method which I have employed in the reconstruction of the utero-sacral ligaments. It will be seen at once how great is the support that such reconstruction gives to the uterus, and that there is retraction of the cervix, into the posterior segment of the pelvis. I was led to undertake reconstruction of the utero-sacral ligaments because I found that even after vaginal repair and the suspension of the uterus by means of a modified Gilliam's operation, the patient, when the prolapse had been a bad one, subsequently suffered with bladder irritability owing to the cervix swinging forward and nipping, as it were, the bladder between the uterus and the back of the symphysis. I rarely practise simple reconstruction of the utero-sacral ligaments now, for although the cervix is kept back by this procedure, there is still left a deep pouch—the pouch of Douglas—which forms a hernia sac in these circumstances. I look upon any success I may have had in the cure of "congenital" procidentia as largely due to the obliteration of the enormously deep and extensive pouch of Douglas present in these cases, together with reconstruction of the utero-sacral ligaments and the other procedures employed in conjunction with the reconstruction of the posterior segment of the pelvic floor. The obliteration of the pouch of Douglas is effected with silk sutures which run in and out through the peritoneum transversely across the pouch of Douglas and pass behind the reconstructed utero-sacral ligaments to terminate on either side above them (Fig. 4). The ends are subsequently tied, so as to bring the utero-sacral ligaments together in the middle line (Fig. 5). In this way a solid floor is made running from the base of the broad ligaments on either side across the back of the cervix and around the sacral arch, leaving room only for the rectum to pass through. The rectum should be fixed with one or two sutures to the edges of the aperture in this new part of the pelvic floor through which it passes. Anyone who has not seen and actually felt the wonderful support thus afforded by what previously had been the weakest part of the pelvic floor can hardly appreciate from this brief description the effect produced.

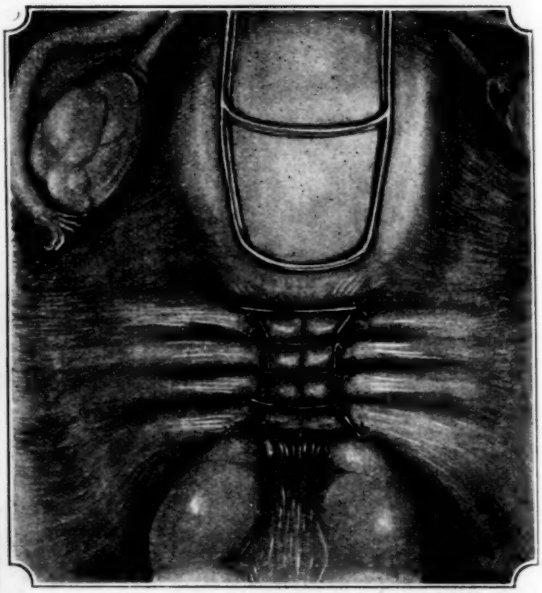

FIG. 5.—Final stages of author's method of reconstruction of posterior segment of pelvic floor.

Vaginal Operations.

Preparation of the vagina.—With regard to vaginal procedures, the first important point is the question of the preparation of the parts concerned for operation. I need hardly say that failure to secure good results is due to sepsis, which seems to have been the chief cause of disaster in connexion with the interposition operation. It must be obvious to anyone that a prolapse, which causes exposure of the cervix and vaginal walls to the ordinary infections of the skin surface, requires special preparation before operative procedures are undertaken. No one to-day would venture to operate on a case in which there was vaginal or cervical ulceration from friction. The patient, in these circumstances, would always be put to bed and the vagina douched and lightly packed to secure healing. In non-ulcerative cases the usual practice appears to be to give a few douches—supposedly antiseptic—before operation. But I doubt whether any method other than that I am about to describe will sterilise the vagina. I have come to the conclusion that douching the vagina with a view to cleansing is not only inefficient but positively harmful. The lactic acid normally found there is washed away, and the weak antiseptic solutions used for douching do not form an effective substitute. The ineffectiveness of douching, of course, is partly due to the fact that only recently have we become possessed of an antiseptic of adequate bactericidal power, which will not at the same time poisgn the subject. We know well that mercury products are extremely dangerous, and that women have been poisoned simply by their absorption from the vagina; the same remark applies to the other antiseptics of real potency in strong solutions, with the exception of those that have found favour during the war. I have had no experience of the aniline dyes. I have used a

strong hyperchlorite solution, and the most convenient of these is Milton fluid, now widely sold for various domestic purposes. This fluid is a powerful hypertonic saline solution which contains 10 g. of available chlorine to the litre. But even with such an excellent solution, which should be diluted to a strength of 1–10 to 1–30 with water, I do not think that douching would be really effectual: we must remember that the vagina is full of crevices and that the fluid introduced in this way will not penetrate to all parts. For this reason I now have the vagina packed tightly with gauze soaked in a solution of Milton fluid, and the pack is changed every 12 hours for several days before the operation. By packing the vagina in this way we open out all the creases, and the solution, with which the gauze is saturated, is able to reach every part. The importance of this procedure is very great, and I think that its adoption will help those who have had serious suppuration in the past—suppuration which, I venture to think, has too often occurred after operation on those cases in which the vaginal walls and cervix have protruded from the vaginal orifice.

Plastic vaginal operations.—I have little to say here in regard to vaginal repair—that is to say, anterior and posterior colporrhaphy and perineorrhaphy—for the procedures are fully described in my text-book on Gynæcology. The essential points, however, that I wish to emphasise are: first, that the mere removal of a portion of the vaginal mucosa and the bringing together of the cut edges is, as I first showed in 1911,[6] not good technique. The vaginal walls, together with the underlying muscle-fibres—in the case of the anterior vaginal wall the fibres concerned are largely those already described as forming the anterior part of the antero-posterior pelvic sling—must be completely and widely separated from the base of the bladder in front and from the rectum behind. The bladder wall and the wall of the rectum will then lie smoothly spread out

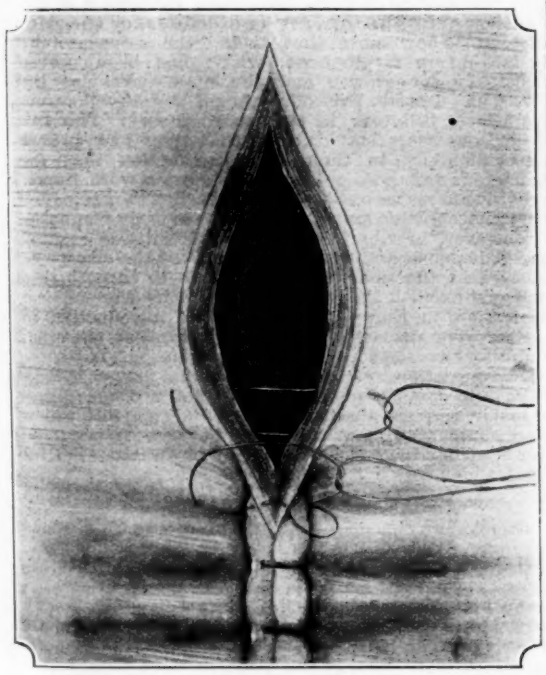

FIG. 6.—Author's mattress and overstitch for vaginal suture. The overstitch may be taken through more than once, if desired.

beneath the scar rather than act as a potential hernia sac. I believe, too, that my method of suturing the flaps composed of mucosa and muscle by means of a combined mattress and over-stitch, to bring large surfaces of the muscle and the edges of the mucosa together, thus forming a buttress throughout the length of the vaginal walls in front and behind, constitutes a most efficient method of forming plastic work on the vagina (Fig. 6). I am glad to say that, from time to time, I receive communications which inform me that operators are finding this the most satisfactory method of performing the vaginal procedures.

[6] Bell, W. Blair: Journ. Obstet. and Gynæcol. Brit. Emp., 1911, vol. xix., p. 519.

I may, perhaps, be allowed, therefore, to call special attention to this mattress and combined edge-to-edge sutures which I devised not only for suturing the vagina, but also for other conditions, such as for closing the uterine wound in Cæsarean section, after enucleation of fibroids, excision of a portion of the uterus, and so on. I think that those who try it will find it a useful detail of technique.

The interposition operation.—Next, I must briefly mention the interposition operation. This procedure implies the fixation of the body of the uterus between the base of the bladder and the anterior vaginal wall with the underlying muscle-fibres. After the vaginal flaps have been stripped back from the base of the bladder and the cervix amputated, the uterovesical pouch of the peritoneum is incised and the fundus of the uterus is delivered. If it is too large, as is usually the case if the patient is not some years past the menopause, a large transverse wedge-shaped piece of the fundus is excised together with the uterine ends of the tubes—an important detail if the patient, although about at the menopause, be still menstruating. The V-shaped opening is closed and the uterus placed in position behind the vaginal flaps. Three sutures are then passed through the anterior surface of the uterus—the last should pass through the supravaginal cervix—and through the vaginal flaps as far out as possible on either side. Anterior colporrhaphy is then performed and the sutures passing through the vaginal wall of the uterus are tied. Posterior colporrhaphy and perineorrhaphy complete the operation.

Post-operative treatment of vagina.—Equally as important as the preparatory local treatment in all cases in which plastic work on the vagina is performed, is the post-operative treatment. Many trust to keeping the bowels confined for a week and to preserving dryness of the vulva, both important details. But what are we to do if blood collects in the vagina and decomposes? Formerly I employed for 24 hours a wick, or small pack, of ribbon gauze to collect the blood, which adhered to the gauze and was withdrawn with it; but I found that subsequent oozing not infrequently occurred. Lavage of the vagina in the first few days after operation is a procedure which not infrequently, especially in the hands of nurses, leads to injury of the parts. I have therefore been driven to devise a method of draining the vagina and of allowing it to be irrigated. I use a double tube (Fig. 7), which is placed in the vagina at the end of the operation and kept in position by means of sutures—one to each arm of the double tube, fixing it to the vaginal orifice. It will be seen that in one arm there are no holes, but that there is a slit-like orifice at the end which will lie at the top of the vagina, and that the

FIG. 7.—Author's double tube for vaginal irrigation and drainage.

other arm is perforated and has a large aperture at the end. Irrigation with a solution of the Milton fluid is practised daily for four or more days. This is effected by means of a funnel and tube attached by a glass junction to the longer arm which is always the one not perforated. The solution is thus carried to the top of the vagina, where it escapes from the slit-like opening and irrigates the whole passage, escaping eventually from the distal end of the shorter, perforated arm. This double tube has been of incalculable value to me. It may, of course, be employed elsewhere than in the vagina.[7] The fact that almost every case in which plastic work only or an interposition of the uterus together with plastic work on the vagina has been performed has made an uninterrupted recovery, convinces me that the methods employed for purifying and draining the vagina have largely solved the outstanding questions concerning the dangers and disappointments which have undoubtedly followed extensive vaginal procedures for prolapse.

Finally, I must add that it is useless to attempt plastic vaginal work unless it is possible to have the assistance of skilful nurses, to whom I believe I have been largely indebted for the success of my cases.

CONCLUSIONS.

1. Operative treatment for prolapse is safe and effectual if satisfactory preparation and after-treatment be adopted in conjunction with proper operative technique.

2. No one procedure is suitable or satisfactory for every type of case.

[7] Since this article has been in the press I have seen a similar tube described in an American journal as "Blake's tube." I have used the tube for several years.

THE PELLAGRA OUTBREAK IN EGYPT.

II.—PELLAGRA AMONGST GERMAN PRISONERS OF WAR: OBSERVATIONS UPON THE FOOD FACTOR IN THE DISEASE.

BY J. I. ENRIGHT, B.A., M.D. N.U.I.,
HON. CAPTAIN, R.A.M.C. IN CHARGE OF MEDICAL DIVISION, PRISONERS OF WAR HOSPITAL, CAIRO.

A GLANCE at the illustrations which accompany this article will suffice to convince the most sceptical observer that I have made no mistake in diagnosis. I therefore do not propose to give a general account of pellagra, the symptoms of which are familiar to all interested in the subject. I may claim to have had an exceptional opportunity of becoming intimately acquainted with this disease. During my three years' association with the Prisoners of War Hospital in Egypt, I saw about two thousand clinical cases of this disease, and assisted or actually performed autopsies on nearly three hundred.

Though pellagra was common from 1916 onwards amongst the Turkish prisoners of war, the most outstanding occurrence, as shedding some light upon the ætiology of the disease, was the outbreak which I am about to describe amongst the German prisoners.

I have traced the various theories hitherto advanced up to the point where they break down, and there, for the moment at least, I must leave them.

Theories of Ætiology.

The literature of the ætiology of pellagra is voluminous, and for a detailed description thereof reference must be made to the many published works on the subject. I shall, however, briefly allude to, and discuss, the more current and popular theories. I am convinced that the disease is neither infectious nor contagious in the ordinary sense of the word. During the three years that I have been dealing with some thousands of pellagrins I have been struck by the fact that all the orderlies, including our own men, and Turks or Germans, in attendance on the patients, remained free from the disease. The character of the blood picture, the type of the temperature, and the post-mortem changes in the central nervous system, as revealed by Singer and Pollock, are evidence against the infective theory. Wilson, also, as a result of his investigations into the pathology of the disease, concludes that whatever the causation, it is not parasitic, but toxic. The theory of Alessandrini that pellagra is due to imbibing colloidal silica in water is so improbable that I need scarcely mention it. At all events, it is well known that the British troops never suffered from pellagra, though they drank the same silicious Nile water as the Egyptians, amongst whom the disease is widespread.

The theory proposed by Sambon that pellagra is due to a protozoon and is conveyed by a biting fly (*Simulium*), I have never found any reasons for believing, though superficially it is a very plausible one, and it has moreover attracted many adherents, among others, Stannus, who has studied pellagra extensively in Nyasaland. In support of the protozoal nature of the disease Sambon has advanced the mononuclear increase in the blood, the chronic course, the beneficial effects of arsenical treatment, and the rural distribution of the disease.

Personally I have never found an increase in the mononuclears in the blood of an uncomplicated case of pellagra, and other observers have confirmed this negative finding; but, as malaria occurs frequently in association with pellagra, it is quite evident that in these complicated cases an increase in mononuclear cells would and does occur. In its inorganic and organic forms I have used arsenic extensively in treatment and could not convince myself that it possesses any value even in alleviating the symptoms. In fact, my experience inclines me to think that it should be contra-indicated in the acute stages as being distinctly harmful. As regards the disease being confined merely to country dwellers, I can enumerate many cases who had resided in a large town for a long period prior to developing the well-known pellagrous symptoms. Besides, there are large districts in Egypt, the West Indies, and the United States where pellagra is prevalent in the absence of any biting flies. However, Jennings, King, Siler, Garrison, and MacNeal, though unanimous in excluding the *Simulium* as a factor in the causation, suggest that the stable-fly (*Stomoxys calcitrans*) may possibly play a part in the dissemination of the disease.

The Maize Theory.

Of all the theories adduced to explain the origin of pellagra, none has been more widely disputed and supported than the maize theory of Strambio, first initiated in 1786, and later elaborated by Lombroso. Wherever and whenever pellagra has appeared investigators have come forward to attribute its causation to maize. Much has been written about the various types of maize and its toxins. Complex organic compounds, extracted from damaged maize by artificial fermentation processes, toxins elaborated during its decomposition by various bacilli and fungi, the actual moulds and bacilli found on damaged cereal and even sound maize itself have all in turn been held responsible for the production of the disease. Moreover, it has been stated that pellagra did not appear in Europe until after the introduction of maize from the New World, and that the disease spread with its more general consumption. As it is outside the scope of this paper to deal minutely with the maize question, I should like to state my opinion that maize alone, though it may be a contributory factor, is not the sole one in the ætiology of pellagra. That is to say, it has no specific action, but may, by reason of the deficiency of its protein, act as a deficient or one-sided diet. It is now known that "zein," the maize protein, is lacking in tryptophane, which has been proved necessary for growth and the maintenance of life (Wilson). Devoto, Driscoll, Volpino, and Nivello were confirmed believers in the maize theory. The two latter observers stated even that they had proved experimentally to their own satisfaction that the pellagrous and those prone to the disease were hypersensitive to maize extracts. This reaction they regarded as pathognomonic and of great value in early diagnosis.

However, in view of the great difficulty of making early diagnosis and of the similarity of the disease to other skin affections, it is reasonable to suggest that pellagra existed, though unrecognised by the medical profession, in Europe long before the introduction of maize. The disease may formerly have been sporadic, and may have assumed epidemic proportions only after the advent of maize. The increase in its incidence may have been due, not so much to the greater consumption of maize as to the absence of other vital elements which were supplanted by maize in the dietary. In the terse words of Sandwith, pellagra might be caused "not by what a man eats but by what he fails to eat."

The Modern Conception of Pellagra.

The modern conception of pellagra is that it is a food-deficiency disease, closely allied to scurvy and beri-beri. Although at first sight no three more dissimilar diseases could be imagined, they are known to possess many features in common; their predisposing conditions and environment are more or less alike, and in all three the symptoms can be ameliorated by a more nutritious diet. Scurvy and pellagra have been found in frequent association, whilst œdema, often culminating in anasarca, is by no means an uncommon sequel of pellagra, thus forming a clinical picture closely resembling that of wet beri-beri. On reading the description of that disease in Manson's "Tropical Diseases," I was at first inclined to conclude that some of the cases were really pellagrous.

The experiments of Goldberger and his co-workers in his asylum and orphanage cases would seem to be convincing testimony that pellagra is a food-deficiency disease and that complete recovery is possible, in the early stages at all events, if a decided increase in the allowance of fresh animal meat is made and eggs and fresh milk are freely given. His actual production of the disease in previously healthy subjects who were sub-

mitted to a curtailed one-sided diet over an extended period would seem to leave little room for doubt as to the causation.

Sandwith, in Egypt, always found that early cases of pellagra could be cured by admission to hospital and by an abundant mixed diet. My own experience among Turkish cases of pellagra taught me that the early cases offered the best chances for successful treatment. In advanced cases the hopes of ultimate recovery are more remote, possibly because the balance of protein metabolism is disturbed in some mysterious way, so that no additional amount of protein in the curative diet can restore it to normal.

When, in the latter months of 1918, the disease appeared among the German prisoners, my faith in the food-deficiency theory, which had previously appeared satisfactory, began to become undermined, so that I was driven to the conclusion that other factors than diet were involved and that a "food deficiency" could not explain the origin of the disease in these men. The Germans had lived apparently upon a varied dietary, ample both in quantity and quality for normal requirements.

I now propose to describe the outbreak in detail, laying special stress upon the previous history of the case, both dietetic and medical, as well as the clinical details and the results of treatment.

Details of the Outbreak.

The total number of cases amongst the German prisoners of war was 65, of which I give details of 32 (Table I.).

1. *Age incidence.*—The ages of the patients ranged from 19 to 45. The distribution according to age was as follows: 24 or under, 32; 30 to 25 (inclusive), 18; 31 to 40 (inclusive), 13; 41 to 45 (inclusive), 2. The period of greatest liability to attack was therefore that of adolescence. This might have been expected from the fact that the outbreak occurred among soldiers, whose ages were restricted to certain limits. It should, however, be noted that the youngest were chiefly affected.

2. *Previous diseases.*—The principal diseases from which the patients had suffered during the two years preceding the onset were the following: Dysentery, 38; malaria, 45; malaria and dysentery, 27; diarrhœa or dysentery, 62. Only 3 of the cases had no previous history either of diarrhœa or dysentery. Two had had symptoms of scurvy before the rash appeared. There were also a few cases of paratyphoid fever, pneumonia, and bronchitis.

3. *Date of capture.*—The great majority of prisoners were captured either in September or early November, 1918. All, with two exceptions, were captured in Palestine; these two were taken prisoners in German East Africa in November, 1917. One of them arrived in Egypt in January, 1918, and was in Maadi prisoners of war camp, near Cairo, from that date until he contracted pellagra in February, 1919. The other came to Egypt in March, 1918, and developed the disease in April, 1919.

4. *Residence before capture.*—With the exception of the two cases already referred to, all were attached to the Turkish forces in Palestine. The duration of their residence in the East varied from 2 to 24 months. A prisoner who had a particularly bad attack of wet pellagra had been in Palestine only two months before his capture. The majority of them were over five months there, as shown in Table I.

5. *Residence in the East after capture.*—Excepting a brief period spent in a stationary hospital or camp in Palestine or at Kantara whilst en route for Egypt the patients had remained during captivity either in Heliopolis or Maadi camps or No. 2 Prisoners of War Hospital in Cairo. Many who were admitted to the hospital directly after capture suffering from other illnesses, such as dysentery or malaria, were discharged to one of the camps only to return later to the hospital with pellagra. The two German East African cases were in Maadi camp, Cairo, for 13 months prior to the onset of the rash. The periods intervening from the date of capture to the appearance of the rash for each prisoner can be seen at a glance in Table I.

6. *Diet before capture (in Palestine).*—The official German army ration for the German troops in Palestine, all picked and highly-paid men, as given me by a sergeant-major in charge of the supply department, is as follows:—

750 g. of bread; 453 g. of fresh vegetables, or 226½ g. of beans, peas, lentils, rice, or potatoes; 350 g. of fresh meat; 30 g. of sausage or cheese, butter or jam; 25 g. of coffee; 17 g. of sugar.

In order to control this statement each patient was asked to furnish me with a copy of his diet while in Palestine. They confessed to having partaken of the following diet.

Breakfast: bread, butter, dripping, eggs, bacon, fresh or tinned sausage, coffee, sugar, marmalade. Lunch: fresh meat, potatoes, fresh or dried vegetables, or beans, peas, lentils, rice or oats, fresh or tinned fruit. Tea: bread, butter, dripping, eggs, cheese, tinned or fresh meat or sausages, tea or coffee (some alcoholic drinks, especially beer).

This diet was substantially the same according to all the reports. There were some minor differences. Some said that occasionally they did not eat fresh fruit or vegetables for a few days, whilst others drank cocoa instead of tea or coffee. They were unanimous, however, in saying that their food in Palestine was sufficient both in quantity and quality. In fact, they all asserted they had been living on "the fat of the land."

TABLE I.—*Details of 32 Cases of Pellagra amongst German Prisoners in Egypt.*

A = Period of residence in Palestine.
B = Period of captivity before onset of rash.
C = Period in hospital.
D = On admission to hospital.
E = At end of period of observation.

Case No.	Duration in months.			Weight in pounds.		Condition at end of period of observation.
	A	B	C	D	E	
1	9	4¾	5¼	101	101	Still in hospital. Very emaciated. Critical.
2	6	4	4	119	141	Discharged. Apparently well.
3	13	4	5½	112	90	Still in hospital. Very weak.
4	12	3¾	2¼	125	139	Discharged. Excellent.
5	5	4	4¾	113	144	,, ,,
6	21	3¾	5	121	158	,, ,,
7	9	3¾	9	109	145	Still in hospital. Greatly improved.
8	5	4	2	111	112	Discharged. Anæmic, but feels well.
9	4	4¾	9	104	133	Still in hospital. Greatly improved.
10	5	5	3	124	131	Discharged. Much improved.
11	2	5½	6	111	100	Still in hospital. Still weak.
12	12	5	6	132	114	,, ,, Doing badly.
13	6	5	5	124	160	Discharged. Excellent.
14	6	4¾	4½	125	146	,, ,,
15	7	4½	4½	138	154	,, ,,
16	10	4½	4	107	120	,, ,,
17	7	4	5½	105	121	Still in hospital. Improved.
18	8	4	5	—*	—†	,, ,, Critical.
19	5	2¾	4½	109	133	,, ,, Improved.
20	12	4	5¾	129	164	Discharged. Excellent.
21	7	6	7	118	136	,, ,,
22	7	5¾	5½	98	131	,, ,,
23	5	2¾*	6¾	124	151	,, ,,
24	10	5¼	8½	100	120	Still in hospital. Much improved.
25	6	4¾	5	116	130	Still in hospital. Improved.
26	12	5¾	4	130	140	,, ,, ,,
27	7	5¾	3½	108	137	Discharged. Excellent.
28	12	5¾	8¼	130	151	Still in hospital. Much improved.
29	8	6¼	6	131	146	Discharged. Excellent.
30	12	6¾	6	127	124	Still in hospital. In statu quo.
31	24	6½	5	132	113	,, ,, Doing badly.
32	7	6¼	4	108	116	,, ,, Improved.

* Not recorded (too ill). † Not recorded.

Diet After Capture.

The diet after capture seemed to me to be ample even for hard labour. Its approximate value as reckoned in calories may be thus stated: The diet after capture may be resolved into two factors: (1) camp diet, and (2) hospital diet.

1. *Camp diet* (according to the Report of the Inquiry regarding the prevalence of pellagra among Turkish prisoners of war, Lelean and Boyd, December 1918, p. 61).

	Protein		Fat	Carbohydrate	Calories
	*B.P.V.	Gross			
26/1/18. G.R.O. 3462...	... 63·5	..... 95·2	..... 29·77	 340	 2062
18/5/18. G.R.O. 3838...	... 54·7	..... 90·3	..... 28·81	 351	 2069
18/8/18. G.R.O. 4385...	... 58·3	..... 92·7	..... 33·47	 341	 2087
† Rations + canteen extras at Maadi, Nov. 18th	89·7	.....144·3	.....120·67	 458	 3589

*B.P.V. = Biological protein value (normal B.P.V. for working individual should be 40, Wilson). † P. 17

As comment on these diets is unnecessary, I shall merely quote the opinion of the Pellagra Committee on the last one (Maadi):—

"This (diet) is of interest in connexion with the fact that 2000 Germans remained wholly pellagra-free during two years' confinement alongside the Turks at Maadi non-labour camp, where many Turks became pellagrous under conditions presenting only one difference—viz., that of diet.

"It is important to note that these Germans had apparently never been exposed to such a dietetic shortage as is associated with pellagra, and their augmented diet is both varied and extremely full for a non-labour community" (p. 18).

The first paragraph of this statement needs considerable revision, especially in view of the fact that the two Germans from German East Africa presumably consumed this diet daily for 13 months and then contracted pellagra. The second paragraph now reads as an anachronism; alternatively the findings of the Committee of Inquiry are out of date.

Hospital diet (No. 2 Prisoners of War).—As furnished by the contractor in charge of the catering:—

Ordinary diet.—Breakfast: Tea and milk, bread-and-butter, and porridge or boiled eggs (2) or omelettes, or curry and rice, or minced meat and rice. Lunch: Bread and pudding and mixed vegetable soup (thick), or pie, or stew, or meat rissoles. Tea: Bread and jam or butter, tea and milk and boiled eggs or omelettes, or stuffed tomatoes, or curry and rice, or minced meat and rice.

Milk diet.—Breakfast: Tea and milk, bread-and-butter, one pint of milk. Lunch: Bread-and-butter, milk and custard. Tea: Bread and jam or butter, tea and milk, and one pint of milk. Extras supplied: Chicken, fish, veal cutlets, raw meat, salad, eggs, bread-and-milk. (Alcoholic drinks supplied at the medical officer's discretion.) It was the invariable rule, when the patient's condition permitted, to add to the milk diet as extras chicken and two eggs.

To correct any source of error which might exist in the contractor's rendering of this diet, I asked a responsible German orderly, in charge of a German ward, to supply me with a copy of the various diets as actually served to the German prisoners in the hospital. His statement substantially verified the contractor's list. Only in one detail did it differ—viz., that tea was not supplied in the milk diet.

The above is an accurate account of the generous diets consumed for the period subsequent to their capture and prior to the onset of the pellagrous rash. The hospital diet is inserted for greater accuracy, as some patients spent but a short period there previous to the onset of the rash. However, the diet exclusively consumed by the majority during this interval was the camp diet.

Time, Place, and Mode of Onset.

In my opinion, the date of onset should be reckoned from the beginning of the last attack of diarrhœa or dysentery immediately preceding the first appearance of the rash; but, as previously stated, the disease can be only suspected in the prodromal stage. Consequently, the exact time of onset remains questionable until the characteristic eruption becomes apparent. For the sake of uniformity I have decided to estimate the date of onset by the first appearance of the rash.

Time of onset.—The date of the earliest onset, as far as my observation goes, was Jan. 10th, 1919. Two prisoners stated that about the beginning of December, 1918, they noticed a peeling of their hands. As they attributed this condition to the cold weather, they did not "report sick" and were not seen by a medical officer. In all probability the onset took place early in December, 1918. The monthly incidence was as follows: January, 13 cases; February, 11 cases; March, 12 cases; April, 14 cases; May, 4 cases; June, 2 cases; July, 7 cases.

Place of onset.—Of the 65 cases, 25 were actually patients in the hospital when the rash appeared. These were admitted suffering apparently from other diseases. On admission 8 had diarrhœa, 9 had dysentery, 2 wounds, and 1 pneumonia. Some were complicated by malaria or by broncho-pneumonia. All had diarrhœa to a variable extent. Of the remaining 40, 32 had been treated in the hospital for diarrhœa, dysentery, or malaria for some considerable time prior to admission for pellagra. They were either in Heliopolis or in Maadi camps when the diagnosis of pellagra was first made.

It must be noted that the Germans most emphatically declared that they had never seen the disease among themselves before capture, though they recognised it amongst the Turks. All these cases must therefore be regarded as primary attacks. My own experience of the accuracy of the German statements and their intelligence with regard to their previous illnesses, the mildness of many of the cases, and the generally successful response to treatment tended to confirm this opinion.

Case incidence.—I am not in a position to state the exact case incidence, as I do not know the total number of German prisoners captured in the final offensive against the Turks. However, I think it did not exceed 1 per cent. The total number of German prisoners was probably between 7000 and 8000.

Condition on admission.—As I have already stated, 25 were in hospital when the rash appeared. These cases were very interesting, as many of them were suspected and put under observation during the prodromal stage. On admission they were weak, anæmic, and emaciated. Some were so exhausted that they had not enough energy to dress themselves, and so debilitated that they frequently staggered when walking. One patient, who presented a particularly miserable and emaciated appearance, told me that previous to this illness he was always healthy and strong; in fact, he was a gymnast by profession. Many of the others were equally emphatic about their previous history. A few, however, were well nourished and expressed themselves as feeling quite well, except for the slight local irritation caused by the eruption.

The weights of all patients were recorded on admission (see Table I.), and are instructive when contrasted with the weights of the same individuals at the end of the period of observation.

Mode of onset.—For some weeks (8 to 16) before the appearance of the rash the patient usually complained of weakness and dizziness. He had obstinate diarrhœa of yellowish colour and watery consistency, with passage of undigested material. The lips were dry and coated with sodden and thickened epithelium; later they cracked, especially at the angles of the mouth. There were epigastric discomfort and pain, often accompanied by sensation of a foreign body in the stomach. Salivation, pyrosis, and stomatitis were also encountered. The tongue was enlarged, fissured, and painful in the tip and sides. The buccal mucous membrane was unduly inflamed. He experienced a burning feeling in the backs of the hands, in the lips, and occasionally in the neck, with vague sensations of aching in the lumbar region and lower extremities, which often showed a transitory œdema. The appetite varied: in some there was anorexia; in others the desire to eat was excessive. The features were expressionless and the voice was low and subdued. On the whole, he presented a picture of profound depression.

The Rash.

I shall here allude only to the salient and peculiar characteristics of the rash.

The backs of the hands or the neck, previously tingling and burning, began to show an erythema, which gave the clue to the real diagnosis. This erythema might appear simultaneously or at intervals on the face, neck, hands, and feet. On all areas the skin soon became pigmented, and eventually desquamated either in fine shreddy scales or in large flakes. Extensive cracking along the natural creases of the hands frequently occurred. The character of the pigmentation varied from a very light superficial brown to a dark brown or almost black, which involved the entire cuticle. When desquamation ceased the skin of the hands became glazed and atrophic. More rarely a thickened brown pigmentation remained.

If, subsequent to the pigmentary changes ulceration of the parts ensued, the case became one of "wet pellagra." The prognosis in these latter cases must always be regarded as grave. The term "wet" applies only to the ulcerative condition of the hands and feet, and does not signify, as some observers have supposed, the presence of dropsy.

The appearances of the rash in its various stages are best visualised by the aid of the accompanying Figs. 1 and 2.

The rash is usually understood to be symmetrical. This symmetry, in my opinion, depended on the equal exposure of the affected areas to the sun's rays. If the exposure were greater for one limb there would be a correspondingly greater extent of eruption on that side. I am quite satisfied that the distribution of the rash was directly proportional to the time and the extent of the exposure. For instance, in a rash on the chest—an uncommon site—the outline corresponded to the opening of the shirt. In the case of Turks, the rash on the feet was limited most accurately by the edges of the slippers worn. I have noticed that sun exposure intensified the eruption and that if the patient exposed himself too soon after the subsidence of an attack there was a great tendency to recurrence.

Aberrant types of the rash, in which there was diffuse generalised pigmentation and desquamation, have been observed. The occurrence of petechiæ in the eruptive areas denoted a much more severe attack, although it must be distinctly understood that, except for the rare form of the disease known as pellagra typhus, of which I have seen only two cases, the wet form must be regarded as the most serious.

Pellagra *sine* pellagra, or pellagra without a rash, is of doubtful occurrence, and accordingly needs no comment.

The differential diagnosis of the rash from allied skin affections offers no formidable difficulties to the experienced observer. The principal diseases simulating it are ordinary sunburn, eczema (erythematous form), lupus erythematosus,

FIG. 1.—Eruption on hand, illustrating the pigmented cuticle, which is desquamating, and also the fissuring around the knuckles.

FIG. 2.—An earlier stage, showing the complete pigmentation of the back of the hand. Desquamation is just commencing. There is also fissuring of the skin over thumb.

FIG. 3.—Showing the typical distribution of the rash on face, which is swollen. Note the pigmented area on nose and in front of the ear, the cracked lips, and the septic spots in right fronto-temporal region. The painting reproduced was done within 24 hours of the onset of the œdema, which was of a transitory character.

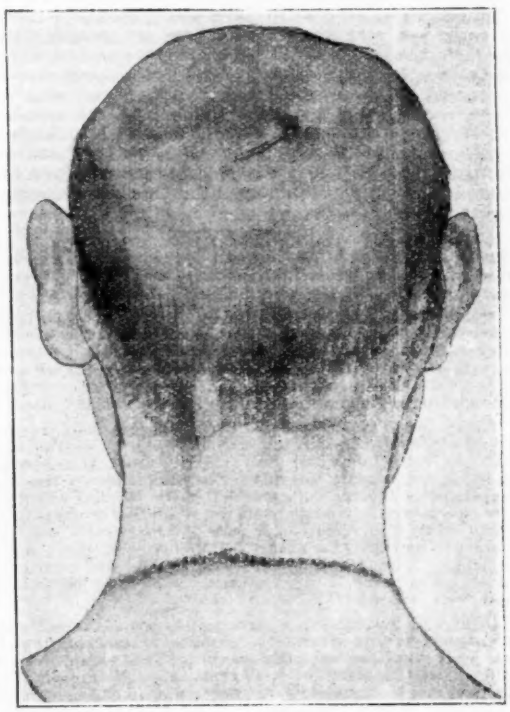

FIG. 4.—Showing the eruption on back of neck. Desquamation is almost complete, and the dark lines represent the last vestiges of pigmentation. Note the collar-like appearance of the rash.

and erythema multiforme. For a detailed account of the differential diagnosis the reader is referred to Swanson's excellent monograph.

The average duration of the rash was about three weeks.

In the eruptive stage the epithelium of the tongue exfoliated and left the tip and edges, in which the fungiform papillæ stood out prominently, bright and shining. In this way the characteristic "stippled" tongue, which must not be confused with the sprue tongue, became noticeable. The mouth was sore and sensitive; the buccal mucous membrane was congested and sometimes showed scattered vesicles. White aphthous patches were occasionally seen, especially on the under and anterior surface of the tongue. The whole organ became enlarged and fissured. The tip and edges were usually inflamed, more rarely pale and anæmic.

General Symptoms and Physical Signs.

In the eruptive stage the patient was very weak and frequently compelled to remain in bed. The facies presented a drawn anxious appearance, there was considerable muscular wasting, the appetite was poor, and a subacute diarrhœa persisted. There was great mental depression amounting almost to melancholia. If the case was more severe, dysentery, either bacillary or amœbic, usually supervened and the wasting became accentuated. The majority of these German cases, however, were comparatively mild, and though at first losing weight they steadily improved after the disappearance of the rash. The subjective sensations experienced by the patient in the stage of onset continued throughout this stage.

A peculiar afebrile *parotitis* was relatively common among these Germans. In some both parotids became enlarged and, after an interval of about 14 days, subsided, whilst in others they suppurated and discharged much pus, from which a staphylococcus was isolated. The exact cause of the parotid enlargement is not definitely known. Some six months previously I had seen a similar outbreak of parotitis among otherwise healthy Turks. The temperature was normal, and orchitis was not observed. The parotids were swollen, but, unlike the German pellagra cases, showed no tendency to suppuration. In these Turks the only explanation suggested was that an infection of Stenson's ducts from pyorrhœa had taken place. However, though I could not give exact reasons for my opinion, I then thought that the parotid enlargement was due in some way to a food deficiency. When this same parotitis occurred afterwards in German pellagrins I was still more convinced of my former opinion. The presence of thrush-like patches in the mouths of some of these same cases may also be significant. Many of them also had diffuse septic sores on the face and hands, while they complained of great thinning of the hair in the temporal areas.

Nervous system.—The knee-jerks were often sluggish and occasionally absent. The cornea and pharynx of some were insensitive. Otherwise there were no evidences of nervous derangement. Mental symptoms were not observed.

Œdema.—A transitory œdema of the face, feet, or hands occurred in many cases (see Table II.). Sometimes it disappeared in 24 hours (see figures); in other cases it persisted as long as 14 days. The œdema invariably disappeared when appropriate treatment was applied. It was not as extensive or resistant as the œdema occurring in the Turkish cases.

Blood.—(*a*) The blood pressure was lowered; average systolic pressure 90, diastolic 80 (Table II.). (*b*) The total red cell count deviated only slightly from the normal, showing a secondary anæmia. No alteration in the size and shape of the red cells was detected. Neither was there any characteristic change in the total number of white cells. There was a slight relative increase of lymphocytes, but they were not markedly in excess, as in many of the Turkish patients. The mononuclears were above the normal in cases complicated with malaria. No eosinophilia was observed. (Table II.).

Urine.—Except for the presence of indican (Table II.) the urine was almost invariably normal. A trace of albumin was only very occasionally present. The significance of indican in the urine of pellagrins, though important as denoting lack of gastric function, is apt to be exaggerated, as Hunter, Givens, and Lewis have shown that pellagra may exist without formation of this substance. The amount of indican in the urine varies inversely with the acidity of the gastric juice and, if excessive in amount, is an index of abnormal protein decomposition.

TABLE II.—*Blood Examinations.*

No.	Total reds in thousands.	Total whites.	Hb per cent.	Polymorphs.	Lymphocytes.	Mononuclears.	Eosinophiles.	Blood pressures. Systolic.	Blood pressures. Diastolic.	Indican in urine in terms of Fehling.	Coincident diseases.	Stools.	Œdema.
1	3200	4000	85	60	33	7	—	100	80	$\frac{1}{4}$	D. & M.	Loose bl. & mu.	Feet.
2	2580	7000	65	63	32	4	1	100	80	Nil.	D. & M.	Loose mu. present.	Hands, face, and lower limbs.
3	3800	4400	80	77	18	4	1	92	75	Nil.	D. & M.	Loose bl. & mu. (Flexner)	Nil.
4	3740	9200	80	69	27	4	—	85	70	Nil.	D.	Loose mu.	Nil.
5	5100	6000	90	58	34	8	—	100	80	Nil.	M.	Loose.	Nil.
6	—	—	—	—	—	—	—	85	70	$\frac{1}{4}$	M. & D.	Loose bl. & mu.	Legs.
7	4660	8200	85	67	26	5	2	90	75		D.	Loose.	Nil.
8	4850	12000	80	70	23	6	1	105	75	$\frac{1}{4}$	D.	Now formed.	Nil.
9	4379	9500	75	63	30	6	1	90	80	$\frac{1}{2}$	—	Loose.	Feet & legs.
10	4850	7800	80	59	31	9	1	95	80	$\frac{1}{2}$	M. & D.	Loose mu.	Nil.
11	3610	6000	90	66	30	4	—	94	78	Tr.	Pr. M. & D.	Formed.	Face.
12	5620	9000	90	65	32	2	1	80	70	+	Pr. M. & D.	Very loose.	Abdominal wall.

Tr. = trace; + = pure Fehling; D & M = dysentery and malaria; Pr. = previous; bl. = blood; mu. = mucus.

Stools.—Only three cases had normal stools. Otherwise diarrhœa was a characteristic feature. Judging from the offensive odour of the copious—sometimes porridgy—evacuations, unusual bacterial putrefaction had taken place. The presence of undigested muscle and vegetable fibres emphasised the defective gastric secretion and corroborated the indicanuria already noted. The diarrhœa often became dysenteric in character. The organisms in the stools were either *Entamœba histolytica* or the dysentery bacilli, more frequently the former. No abnormal organism, which could be proved to have any specific relationship with pellagra, was discovered. It may be mentioned that *Ascaris lumbricoides* was often present.

Lungs.—Usually normal. Only one case of pulmonary tuberculosis was diagnosed.

Heart.—Functional hæmic bruits were occasionally heard. Otherwise no abnormality in the size or sounds was detected.

Liver.—Normal in all cases.

Spleen.—Frequently enlarged, indicating a previous malarial infection.

Prognosis.—As all these cases were primary attacks, the prognosis was, on the whole, good. When my observations concluded 31 had been discharged as apparently quite fit; while of those still remaining in the hospital 22 were decidedly improved, 6 were in statu quo, 4 were worse than on admission, and 2 were in a critical condition. Only one patient had succumbed. The increase in weight (see Table I.) recorded in the majority of the cases augured well for their eventual recovery.

Treatment.

The first essential in these cases was the effective treatment of any coincident disease. If the patient had dysentery, serum or emetine (intramuscularly) in combination with sodium sulphate by the mouth was administered, and a milk diet, sometimes with the addition of chicken and two eggs, was prescribed. Malaria, which was very common, was treated by a course of intramuscular quinine, followed by a mixture containing quinine, iron, and arsenic.

When the superadded infection was thus treated and relieved the treatment of the pellagra itself was undertaken. It consisted of rest and an increased dietary. The hospital full diet—recorded in an earlier part of this article—augmented by 7 oz. of meat, 7 oz. of bread, and two eggs daily, was given, and the patient was ordered to remain indoors and at rest. If the stools continued solid he became gradually better. His general health improved, he increased in weight, and the rash slowly

disappeared. As long as diarrhœa did not occur the prognosis was good. Eventually he became robust and expressed himself as feeling very well. Whether the pellagra was permanently cured or not it is as yet impossible to say, as there might be a recurrence of the disease in the following year. It would be interesting to know how many of these cases relapsed during the spring of 1920.

Persistence of the diarrhœa was regarded as of grave import. It interfered seriously with the patient's prospects of recovery and was an indication of his defective assimilative powers. Diarrhœa and wasting were invariable symptoms in those doing badly. However, the immediate effects of this dietary were extremely satisfactory, as evidenced by the fact that 46·1 per cent. were discharged as apparently cured and 33·8 per cent. were decidedly improved, even though not fit to be discharged from the hospital.

Conclusions.

In view of the findings resulting from the investigation of this outbreak, the "food deficiency theory," which has been considered on apparently adequate grounds to be the cause of pellagra, is seriously threatened. I do not mean to suggest that a food deficiency can be quite excluded, but from the facts before us it can hardly be considered as of paramount importance. Obviously something more than a dietetic factor is involved.

A critical analysis of the diets which these German pellagrins ate before capture and during their period of captivity prior to the onset of the eruption is sufficient to explode the food-deficiency theory as a predisposing factor. These diets were ample, both in quantity and quality, for any possible requirements, and were of such varied composition that it is perplexing to understand how they could have been improved.

If the account of the diets is accepted as accurate—and I firmly believe it is accurate—the causation of the disease, far from being elucidated, becomes still more obscure. Thus it is necessary to seek some other explanation.

Let us consider how the beneficial effects of a diet sufficient for a normal healthy individual, doing a normal amount of work, are liable to be counteracted. An originally good diet may be vitiated by loss through (1) abnormal expenditure of energy, (2) defective assimilation consequent on impaired digestive function, (3) absence of some internal secretion which is necessary for protein metabolism.

To what extent, if any, was the German diet affected by the above factors? Firstly, I do not think the Germans were subjected to undue hardship or did excessive work on the Palestine front. Many of them were employed on the lines of communication, where there was neither strenuous labour nor scarcity of food. We know that the Germans attached to the Turkish forces were picked men, who supervised affairs, and were not called upon to over-exert themselves manually; they left the actual physical labour to the Turks.

That the pellagrins suffered from defective digestive assimilation is undoubted. The incidence of malaria and dysentery was very high, and was responsible for intestinal derangement, which was a marked feature of the majority of my cases. Judging from the indicanuria commonly present and the copious foul-smelling evacuations which frequently contained undigested food material, it is evident that there was abnormal protein decomposition, and that the ultimate good effects of the diet were largely vitiated or entirely lost in this manner.

Hence, a second factor, such as previous disease, must have been in operation. Is this, however, a satisfactory explanation? Though possibly a contributory cause, a previous disease could not be held directly responsible. Otherwise, how does one account for the absence of pellagra amongst British troops who had been affected in an almost equal degree with malaria and dysentery? Again, how does one account for the absence of pellagra from the diseased and poverty-stricken masses of Central Europe during the same period?

Lastly, are there any reasons for thinking that an internal secretion may be implicated? It has been suggested that adrenal insufficiency was the immediate cause of war œdema, which is, in my opinion, closely related to the œdema of pellagra. The probability of a hypoadrenalinæmia in war œdema is, however, based on a previous food deficiency. As we do not admit a deficiency of accessory food-factors in this outbreak, neither the information gained from the study of war œdema nor the recent researches of McCarrison are applicable and, consequently, are of little assistance in elucidating the causation of the disease among the Germans.

There was certainly no lack of fresh fruit in Palestine and Syria during the enemy occupation, as the entire orange crop of Jaffa and surrounding districts was at their disposal. One might suppose, when one considers the great improvement made by the majority of the cases on the augmented hospital diet, as prescribed in the treatment, that the former diet was defective. To obviate such a misapprehension let me direct attention to the German camp diet at Maadi prison camp, and the excellent testimonial given it by the members of the Pellagra Commission inquiry. Yet two Germans, who spent a year in that same camp on that same diet, developed the disease. I quote this example to prove that the record of the diet in Palestine is probably accurate, and that it also was satisfactory in every respect.

I have already referred to the occurrence of a parotitis and its probable significance. It would be interesting to know whether the parotid enlargement was due merely to secondary infection from the mouth or to some other and as yet unknown factor. Does the parotid possess any rôle in protein metabolism? I realise that I am treading on thin ice when I hazard the suggestion that this gland may possess an internal secretion, the function of which is concerned in the economy of protein, just in the same manner as the pancreatic secretion is essential for normal carbohydrate metabolism. I am not aware if complete extirpation of the parotids has ever been attempted. It would be of interest to discover what changes would result from such an operation.

I may add that Major P. J. Smyth, R.A.M.C., had observed a similar parotitis in Salonika. He, too, was at a loss to understand its causation, but was of the opinion that it might be due to a dietetic disturbance. The association of the parotitis with pellagra is curious and may have some relationship to the production of the latter.

Although I have been unable to advance any satisfactory cause for this most mysterious outbreak of pellagra, I do submit that I have established a clear case against a "food deficiency" as being the only factor involved.

In conclusion, I wish to record my indebtedness to Dr. Manson-Bahr for his valuable assistance, both in supplying me with information and in making suggestions for this paper. I must also thank Colonel P. S. Vickerman, R.A.M.C., for the facilities he afforded me in investigating these cases and Captain R. Paton, R.A.M.C., for the blood counts which accompany this article.

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SYPHILIS IN DISEASES OF THE HEART AND CIRCULATION.

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THERE are reasons for expecting visceral manifestations of syphilis to appear at an unusually early period in the case of those who have gone through the stress and strain of the late war. Cases of atheroma and tabes occurring thus early have already been reported, and it is fair to assume that the heart and other internal organs are equally prone to premature degenerative changes.

The cardio-vascular system does not escape injury in congenital syphilis. The late George Carpenter read an exhaustive paper on this subject,[1] which will repay careful study. An apposite case was contributed by the present writer.[2]

The case was that of a girl, aged 15 years, whose mother had a strong history of syphilitic infection. The patient had had the usual symptoms of congenital syphilis in infancy and presented the characteristic facies of the disease. She had palpitation and marked dyspnœa. The cardiac dullness was increased, with heaving impulse, induration of the larger arteries, and the liver was enlarged nearly to the umbilicus. No murmur was found, but the aortic second sound was accentuated. The urine contained 2½ per cent. of albumin, and there were tube casts; pulse rapid and of "tick-tack" character. After a temporary improvement the child died of heart failure. There was no history of rheumatic or any other infection. At the post-mortem the cavities of the heart were found dilated and the left ventricle hypertrophied. No valve lesion was found.

In regard to the effects of acquired syphilis on the cardio-vascular system in the adult, in a recent work by the late Dr. Edward Lea[3] reference is made to the writings of Ambrose Paré (1510–1590), in which he comments on the relationship of aneurysm to syphilis, an idea which was developed by Landsici (1727). On p. 193 et seq. Dr. Lea speaks in no measured terms of the potency of the syphilitic factor in relation to circulatory disease.

"The virus of syphilis is the arch enemy of the circulatory system; it is the main cause of aortic regurgitation, also of aneurysm; it rots the blood-vessels, leading to hæmorrhages ofttimes fatal. It blocks the smaller arteries—arteritis obliterans. The severest and most painful forms of aortic inflammations are due to syphilis. Clinical heart-block is usually formed by a gumma. Yet we are only at the beginning of the influences and potentialities for harm. ..... To cardiology will be added a useful chapter when the ultimate clinical effects of syphilis upon the heart have been more fully investigated."

Osler,[4] on syphilis of the heart, remarks, "A fresh warty endocarditis due to syphilis is not recognised, though occasionally in persons dead of the disease this form is present." The author quotes Janeway, Loomis, and others on the presence of gummata, fibroid and amyloid degeneration of the heart.

In annual Reviews of the Literature of Heart Disease in the *Practitioner*, I have frequently referred to contributions from various parts of the world bearing on this subject. Thus, in the number for June, 1914, a paper by Warthin is summarised as follows:—

"Syphilis is more productive of heart disease than is generally supposed, and that it is frequently associated with syphilitic affections of nerve, brain, bone, and aorta. The author states he has had 200 syphilitic hearts, 50 congenital, 150 acquired, at all stages; he considers that primary lesions may be parenchymatous or interstitial. ..... The author concludes that syphilis, both congenital and acquired, is the most important factor in myocardial and endocardial diseases."

In the same review is given a case of complete A-V heart-block, in which there was a definite history of syphilis and a positive Wassermann present.[5] Lauder Brunton[6] describes a case of angina pectoris in a syphilitic subject who contracted the disease 12 years previously. The author attributed the angina to reflex irritation from a node over the sternum or possibly to the involvement of some of the cardiac nerves. Iodide of potassium completely cured him. Clifford Allbutt in his classical work,[7] vol. ii., p. 145, thus graphically describes the after-effects of aortitis.

"The aorta of a man 55 years of age, who has taken freely of drink and suffered from syphilis, lies before us. The vessel (aorta) is heavy, baggy, and hard; its walls are beset with knotty masses. On laying it open we find the stretching has told chiefly upon the ascending arch and vault, and that besides the old syphilitic pouches and scars, and engrafted upon them, atheromatous bosses and plates, some calcareous, some ulcerated, now occupy its inner face. The aortic cusps are thickened and deformed; the sinuses of Valsalva are contracted, and the orifice of the heart is altered. The orifices of the coronary arteries also are invaded by atheroma; the orifice of the right coronary artery occluded perhaps, so that of the left barely admitting a bristle. The cusps, altered as they are, may be competent against regurgitation; the heart in substance looks healthy, and to the naked eye and the microscope, looks healthy, in spite of the interference with the mouths of the coronary arteries, presents in its muscular tissue no worse sign of degeneration than a moderate fibrosis."

On p. 239 the author writes:—

"The cases I have seen (of angina) in younger persons have all originated in the specific infections—especially in syphilis, rheumatic fever, and influenza."

It is not safe to place implicit confidence in the patient's denial of having had syphilis when clinical evidence points the other way, neither is a negative Wassermann always to be trusted. In the present writer's experience tactful inquiry will often confirm a strong suspicion. In women a history of several miscarriages is strong evidence in favour of syphilis. A case was seen on the day of writing this paper where, in addition to miscarriages, all the children born alive had sore buttocks and were treated with mercury by the late Jonathan Hutchinson.

Illustrative Cases.

CASE 1.—H. A., 50, married, consulted me in 1902; one son and one daughter, the former healthy, the latter an epileptic. No family history of fits. History: Syphilis

[1] Reports of the Society for Study of Disease in Children, vol. viii., p. 264.

[2] Ibid, p. 145–6.

[3] Heart Past and Present, 1919, p. 193.

[4] Principles and Practice of Medicine, 1916, p. 275.

[5] G. A. Allen, Glasgow Med. Jour., Sept. 14th, 1914.

[6] Circulation and Respiration, p. 193.

[7] Diseases of the Arteries and Angina Pectoris.

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in India at 19, malaria in W. Indies at 25. Took alcohol rather freely when young, now takes four "drops" a day. Complains of pain in the cardiac region, palpitation, and shortness of breath on any exertion. He has been worse lately, and can only walk a few yards; occasional giddiness; also much flatulence. Examination: Tongue red, stomach dilated, liver down two fingers, cardiac dullness just outside nipple-line; apex beat sixth space, rough systolic murmur at mid-sternum; arteries thickened, hard and tortuous; deficient resonance base of left lung due to old pleurisy; urine normal. Has lost flesh, teeth bad, pulse 76. As the stomach symptoms were the most urgent treatment was directed to their relief. A fortnight's rest was ordered, after which period antisyphilitic treatment was commenced. After a few weeks the patient lost weight and it was feared tuberculosis had set in, but no tubercle bacilli were found, and later on he put on weight and lost all the cardiac symptoms. I saw the patient at long intervals, and he held his ground well. On June 28th, 1913, he came up on account of soreness of the mouth, especially at the angles; these sores were characteristically specific; there was, moreover, a large gumma on the left side of the tongue. Green iodide of mercury was prescribed in conjunction with local treatment, and ultimately the mouth was well. There had been no visible sign of syphilis for 30 years. The patient is in better health than 18 years ago.

CASE 2.—T. G., 54, married, one child, consulted me in December, 1915. He complained of pain in the left wrist, running up the arm and radiating across the chest, provoked by walking or any exertion and relieved by stopping still and eructation. History: Rheumatic fever at 5 years; syphilis at 20; passed several small renal calculi at 32; influenza at 51. Present symptoms commenced a year ago while ascending a hill; increasingly worse the last three months in spite of treatment. Examination: Patient looks ill and has an anxious expression. There was dullness and hyperalgesia over the upper two-thirds of sternum, extending ½ inch to the left, apex beat sixth space nipple line, heart dullness extended to left nipple line and to right side of sternum. A double murmur in aortic area, the diastolic being loud and blowing, a feeble systolic murmur at the apex increased on lying down; pulse 84, moderately splashing, arteries hard and tortuous and visibly pulsating, blood pressure 220/70, Raynaud's symptom both hands. Other organs apparently healthy. The patient was ordered to take one month's rest in bed, light nutritious diet, light wine in the place of whisky, and antisyphilitic treatment with small doses of tr. digitalis was prescribed; and a trinitrine mixture with ether for pain. The treatment had to be varied from time to time. By the end of the month the patient was able to walk a short distance without pain. Improvement was steadily maintained, so that by the end of June he could walk half a mile without pain or inconvenience, and a few months later he was able to dig and mow grass. He was last seen in 1919, when the sternal dullness and hyperalgesia were gone; the murmurs were as before.

It was impossible to say which of the three infections was most responsible for the cardio-vascular lesions, but aortic disease does not commonly follow rheumatic fever, especially so early in childhood. Again, a year elapsed from the influenza without heart symptoms, so the presumption was in favour of syphilis.

CASE 3.—A. W. consulted me at long intervals on account of bronchial catarrh and indigestion. The breath was short on much exertion, but this could be accounted for by emphysema. The chest was thoroughly examined from time to time without anything abnormal about the heart being discovered. Eighteen months ago I saw him in bed for the first time when, in addition to bronchitis, I found extension of the heart dullness increased in both directions and a systolic murmur at the apex. I thought the heart would improve as the bronchitis cleared up, but the murmur remained. In December, 1919, he was again very ill from heart failure and dropsy. As the patient could not be efficiently nursed at home he was removed to the Middlesex Hospital. Later on I called to see him, when Dr. Voelker, under whose care he was, called my attention to some scars on the soft palate and damage to the uvula. These, owing to my attention never having been called to the mouth or throat, had escaped my observation.

The lesson to be learnt is that when a patient with organic heart disease comes before us and there is no history of the more usual infections syphilis should be suspected and confirmatory evidence diligently sought for, especially in patients at or after middle life. When the cardiac symptoms are not urgent it is advisable to prescribe a period of rest, together with a short mercurial course, before proceeding to the administration of the more direct cardiac remedies.

NOTES ON THE
CAUSATION OF RED DEGENERATION.*

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THE specimen of a uterus shown in the illustration, the seat of a fibroid which had undergone "red degeneration," was obtained from a single woman, 27 years of age, who was admitted to this hospital on June 2nd, 1917, under my care. She was thought to have appendicitis. The illness began on May 25th, when during a railway journey she felt a sharp cutting pain, soon passing off, on the right side of the abdomen. Reaching home at 6.40 P.M., she avoided supper (as she often did) and went to bed in her usual health. At midnight she was awakened with severe pain in the lower part of the abdomen, vomited, had diarrhœa, and fainted. Later she fell asleep till 6 in the morning. On rising she felt giddy and still had pain; but in spite of it, went her round delivering letters on a bicycle for an hour. She spent the next two days on a couch with light food, but the pain persisted. On May 31st she was advised to go to bed, but on this day her period began, and the pain in the abdomen ceased. Her temperature, however, was still raised and the bowels confined. On June 2nd, the temperature continuing, she was sent into hospital with the diagnosis of appendicitis.

On examination, the patient was not anæmic, and looked fairly well. Her temperature was 100° F., and her pulse 96. Her tongue was not clean; she had not been sick since the onset of the illness, but the bowels had been opened just before admission, the result of medicine (compound liquorice powder) two nights before. The abdomen was not distended and moved easily on respiration. There was no rigidity. There was no lump to be felt in the region of the appendix; deep palpation at McBurney's point caused no pain. On palpation of the hypogastrium, a resistance was felt rising 2 inches from the superior border of the symphysis. Pressure in this region was not painful; at most a little tenderness was complained of low down on the right side. Here, a small movable lump, evidently a gland in the lower abdominal wall, above Poupart's ligament was felt, and at times was painful.

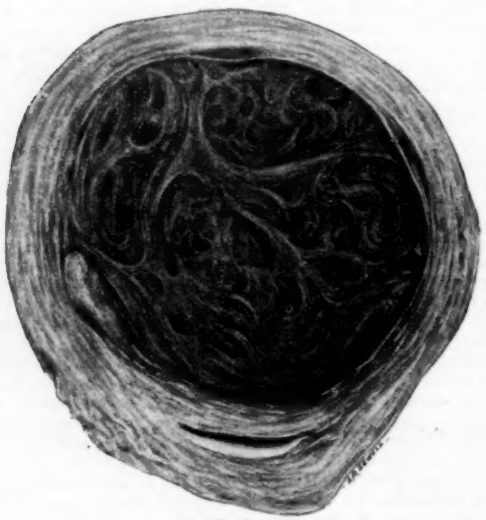
Inspection of the vulva revealed nothing in particular—the hymen had been dilated. Per vaginam, the cervix was normal and nulliparous. On bimanual examination, the pelvic cavity was found occupied by a tumour, the size and shape of a large orange, of a smooth and regular surface, hard to the touch, easily movable within limits in all directions, as though its volume alone restricted its displacement. The tumour was continuous with the cervix. The breasts were inactive. A diagnosis of uterine fibroid was made. The menstrual history confirmed this opinion. During the last six months the periods had increased in duration; instead of four days they have lasted five or six or even seven days, and the intervals between them have diminished. The loss has gradually become much greater; so that whilst formerly five or six diapers sufficed, latterly she has had to use 16 or 17. The pain, which has preceded the periods since her eighteenth year, has also increased. She began to menstruate when 13 years of age.

Differential diagnosis.—The question now arose whether the fibroid or some other pathological condition was the cause of the signs and symptoms of the disease. We had no knowledge as to the size of the uterus before this attack. Examination of the abdomen, however, was negative as to the presence of any other pathological condition, and nothing abnormal was found in the head, neck, chest, or limbs. The urine was normal. As the patient was menstruating, the question of a uterine discharge could not be cleared up, although she gave no history of one. An inflammatory state of the fibroid, due to a

* Read at a clinical meeting held at the Hospital of St. Cross Rugby, Feb. 28th, 1920.

possible infection, seemed unlikely. The tumour was hardly large enough to support the idea of necrosis due to a slowly occurring deficient blood-supply, and the acute onset was opposed to this, whilst red degeneration was dismissed because the cause of the red degeneration, as I saw it, did not exist. The patient was not pregnant, and there was no evidence that the pressure conditions within the abdomen were abnormal. As there was no obvious reason for operating immediately, I decided to await events.

Course.—With rest in bed and dieting, and attention to the bowels, the patient's condition gradually improved. The temperature slowly fell and the pulse with it. No sign of inflammation of the appendix showed itself.



Specimen of a fibroid which has undergone red degeneration removed from a single woman.

On June 7th the menstrual flow ceased, having lasted eight days; there was no subsequent vaginal discharge, and nothing abnormal was found in the cervix or vagina. I decided to operate as soon as the patient's temperature became normal. This happened on June 13th, and the next day I removed the uterus, leaving the cervix.

At the operation, from which the patient made an uninterrupted recovery, the tumour was found to occupy nearly the whole of the pelvic cavity, so that difficulty was experienced in drawing it up. It looked exactly like a pregnant uterus, was quite symmetrical, but instead of being cystic was hard. After removal it was hardened in formalin, and on section in the antero-posterior plane revealed a single intramural fibroid of the colour of raw meat.

Pathological Report.

The fibroid occupied the centre of the enlarged uterus and was everywhere surrounded by uterine wall which was fairly thick. It had grown from within one or other of the uterine walls, and had displaced the uterine cavity. Its discolouration was uniform, and markedly contrasted the diseased part from the healthy musculature of the organ, which was of its usual white colour. A portion of the uterine wall and of the tumour was sent to the University of Birmingham for histological examination. Professor Leith kindly examined it. In answer to my inquiry whether the uterine musculature was hypertrophied, Professor Leith wrote: "There is every appearance to the naked eye of hypertrophy of the uterus here, as there is in most other fibroids ....." And, as to the cause of red degeneration, he said: "The chief points about red degeneration are: (1) the asserted thrombosis and its cause; and (2) the undoubted hæmolysis and its cause." In his report on the sections, he says: "In the outer part of the fibroid (are) large blood-vessels, but they are not thrombosed, nor is there any obvious thrombosis throughout the whole series of sections, so far as I can see." The outer part of the fibroid also "shows degeneration but no actual necrosis." Sections from the inner parts of the fibroid, however, do not show "much degeneration. In great part they are histologically sound. ..... There is no thrombosis, no excess of fat, and very little, if any, necrosis, only a patchy degeneration." He ends by saying that most of the red degenerations he has examined "have shown imperfect necrosis and unsatisfactory evidence of degeneration compared with the degree of naked-eye change which they exhibited."

Pregnancy an Exciting Cause of Red Degeneration.

The red degeneration of fibroids is rather interesting. It is much more common in pregnant than in non-pregnant women. It causes a toxæmia (as shown by its effect on the temperature and pulse); it causes pain: and it causes an enlargement of the tumour. Pregnancy is a powerful exciting cause (Bland-Sutton).[1]

Out of 40 specimens Bland-Sutton examined, 26 were associated with pregnancy. But I scarcely think that 14 out of every 40 of these cases come from non-pregnant women. Kelly and Cullen, in their work on myomata of the uterus, a study confined for the most part to the non-pregnant, seem scarcely to have met the condition.[2] The toxæmia has been attributed to an infection by pyogenic organisms (staphylococcus). But Lorrain Smith and Shaw, who out of four cases found this organism in two, conclude "that the bacterial infection is secondary to the occurrence of the thrombosis."[3] Bland-Sutton is also of the opinion "that microbic infection of red fibroids is a sequence and not a cause of the change," and that "micro-organisms are rarely found in red fibroids."[1] He believes the condition is due "to mechanical interference with the circulation."[4]

Whether a toxæmia—using that word in its widest sense—is present in all cases of red degeneration I cannot say. Everybody seems agreed that the tumours become enlarged and tender. "Fever," says Bland-Sutton, "is not a common symptom, but it occurs." The patients, however, as is plain from reported cases, often become profoundly ill. "When a pregnant woman complains of acute pelvic pain," says Bland-Sutton, "and the presence of a uterine fibroid is unsuspected, then grave errors of diagnosis happen and occasionally unnecessary operations are performed." I suggest that when fever is not observed it is not looked for, or only a slight rise of temperature is found. In my case the highest temperature recorded whilst the patient was in hospital was 100·6°. The fever, apparently, is usually slight, comparable with the fever observed after many operations, due to the absorption of blood or its products, and aseptic in type. But that this is a toxæmia cannot be gainsaid. It is a mild toxæmia, but still a toxæmia. The presence of micro-organisms is adventitious; the toxæmia I refer to is not due to them; they occasionally complicate the condition which it is desirable to contemplate in its purest form.

The cause of this change is interesting. What we have to explain is the swelling; the dilatation of blood-vessels; the diffusion and hæmolysis of blood. I believe Bland-Sutton is right—that the change is due to a mechanical interference with the circulation. Such an interference may arise in two ways: (1) It may occur as the result of persistent and spasmodic contraction of the uterine musculature enclosing a fibroid, or (2) it may occur through general increase of pressure in the abdomen, as in pregnant women.

Rhythmic variation in the contraction of the uterine musculature is presumably a normal occurrence; in the pregnant uterus such variations can be observed. In the non-pregnant increase in contraction is a prelude to normal menstruation, the contraction becoming sufficient to interfere with the nutrition of the endometrium, which swells, partly necroses, and is shed mixed with blood.

[1] Fibroids of the Uterus, 1913.
[2] Myomata of the Uterus, 1909, p. 653.
[3] Pathology of Red Degeneration of Uterine Myomata, Jour. Obstet. and Gyn. Brit. Emp., April, 1909, p. 225.
[4] Red Degeneration of Uterine Fibroid, Proc. Roy. Soc. Med., Obstet. and Gyn. Sect., 1909, p. 301.

In dysmenorrhœa the contraction is so great as to cause pain, and this pain is persistent, perhaps for a day or two, indicating the persistence of the contraction, and this pain, as we know, is experienced before the flow. With the cessation of the pain and the diminution of the contraction the blood escapes from the dilated broken vessels. Thus the idea that the uterine musculature, in virtue of an increased contraction, may be associated with a vascular change of magnitude in fibroids it surrounds is supported by analogy. And that such a factor was in play in my case is supported by the position of the tumour and by the hypertrophy of the uterine walls embracing it.

Increase of Pressure as a Causal Factor.

But another factor seems to be necessary, otherwise red degeneration would be much more common than it is. Such a factor may be a preliminary engorgement of the tumour, induced by trauma or by jolts, due to rises of pressure in the abdomen itself. Such jolts may perhaps act directly on the uterus, causing its musculature to contract more markedly than usual. The jolting sustained by my patient on her train journey may have played such a part. The tumour becoming enlarged by vascular turgescence puts the uterine musculature surrounding it on the stretch, and this in turn induces a contraction, or a further contraction of the uterine musculature, intense enough to interfere with the blood-supply to the tumour. In support of this we have the enlargement of the tumour and the pain induced. In my patient we noticed the pain complained of immediately disappeared when the menstrual flow began, because, presumably, the uterine musculature relaxed. Even in subserous fibroids which have become swollen from this change a relaxation of the uterine musculature, by allowing a return flow from the tumour, may affect the pain and tenderness experienced. To such an argument it may be opposed that the uterine musculature itself remains healthy; if it causes a necrosis of a contained tumour, why does it itself not suffer? A ready answer is that the uterine musculature is a normal tissue, and its nutrition is more regulated than that of pathological parts; but whether this answer will satisfy critics remains to be seen.

That increase of pressure is a causal factor in the red degeneration of fibroids is indicated by the much more frequent occurrence of the change in the pregnant state. The intra-abdominal pressure, as I have shown, is raised in pregnancy,[3] and this increase influences the blood flow through all the abdominal organs. The arterial pressure is raised, but the capillaries are more compressed. The venous return, at least from some parts, is impeded, as shown, for example, by the bluish discoloration of the vagina. But even here jolts and jars or activity appear necessary. Most interesting is it to find that one of Bland-Sutton's patients had an experience similar to mine; she was seized with the pain whilst on a train journey. She was a primigravida, aged 30, two months pregnant, who had been to London to consult a doctor. This doctor expressed himself as satisfied with her condition. Whilst on her return she was seized with such sudden and acute pain that she left the train at an intermediate station and placed herself under the care of a doctor she knew. A large tender swelling was discovered on the right side of the abdomen and thought to be due to a ruptured tubal pregnancy. The next day Bland-Sutton "found a large tumour, probably a fibroid, occupying the right half of the belly, and reaching as high as the liver." The pulse was 112 and the temperature 100°. The tumour was a large subserous fibroid, with a broad stalk. It presented an area of softening, about 5 cm. in diameter. This patch appeared acutely inflamed, and was covered with flakes of lymph. Deep to it the tumour was the seat of a red degeneration. Other fibroids were present in the gravid uterine wall and exhibited the red change in streaks.[4]

Jolts and jars must necessarily cause considerable variations in the intra-abdominal pressure; to meet them the tonic contraction of the body wall musculature is increased, so that the average pressure is raised. They may perhaps act by causing a kinking of the veins in pedunculated fibroids; or, if they stimulate the uterine musculature to contract, this contraction may obstruct the return of blood from such parts. Such an interference must cause a turgescence, a dilatation of the vessels, and a swelling of the tumour; the further obstruction and compression of the tumour, in the presence of a raised arterial pressure, causes a rupture of capillaries, an effusion of blood, a more marked swelling, and the pain. The blood rapidly hæmolyses and pigments the tissues, whilst its products entering the blood stream cause that elevation of the temperature and rapidity of the pulse with which we are familiar. When such fibroids are left the toxæmia subsides, as my case shows. The fibroids themselves may become diffluent, converted into cysts with chocolate-coloured contents (Bland-Sutton). When subserous they become adherent to surrounding parts: to the abdominal wall and intestines, which may mask their nature and render removal difficult (Lorrain Smith and Shaw). When intramural it is possible calcareous salts may be deposited and the tumours in time be discharged as "womb-stones."

Analogy with a Twisted Pedicle.

That the red degeneration of fibroids is really caused in this way is, I think, also shown by what happens when the pedicle of an ovarian cyst becomes twisted. There is a marked similarity between the signs and symptoms of red degeneration of fibroids and those resulting from the latter accident. The onset of the pain is alike acute, the patient may vomit, and the temperature is raised and the pulse increased. Such a case was sent into hospital on May 30th of last year labelled pyosalpinx. The patient presented all the appearances of an acute abdominal condition. A lump was felt in the left iliac fossa, which was painful and tender. The overlying abdominal wall was rigid, and the bowels were confined. The temperature was 101·4° and the pulse 120. On opening the abdomen, which was done next day, an ovarian cyst the size of a child's head, swollen, congested, suffused with blood, with a thick, œdematous, hæmorrhagic, and twisted pedicle, was found and removed, recovery being uneventful.

I instance this case from the toxæmic point of view. Like that of the red fibroid, this case presented the characteristics of a toxæmia, masked, however, by the local changes. But here there is no question of a preliminary thrombosis of contained vessels; nor are pathologists worried by the cause of the hæmolysis. The toxæmia is slight and traumatic; the same as results from the red degeneration of fibroids. These tumours when left, like red fibroids, become adherent to neighbouring parts, the toxæmia subsiding. Illustrative of this is a case admitted on Dec. 27th, 1918. The patient was 76 years old. The history was that 14 days before she had had an attack of pain and vomiting. There had been no previous attack. On admission the temperature and pulse were normal. On opening the abdomen a fairly large cyst, the size of a coconut, was found with a twisted pedicle. It was adherent to omentum, but presented no sign of acute strangulation. Recovery was uneventful. I had a similar case whilst on military service at Grantham. A woman was admitted with ill-defined symptoms. A diagnosis was not made. The abdomen was opened; a flaccid ovarian cyst, with degenerate walls, presented. During my manipulations the cyst wall gave way, dirty but inoffensive fluid escaping. The cyst was adherent to the posterior wall of the uterus and was peeled off with difficulty. No complication ensued during the convalescence. It is probable that the cyst had become twisted, with a resulting necrosis and consequent adhesion.

Proc. Roy. Soc. Med., Obstet. and Gyn. Sect., 1913

THE London (Royal Free Hospital) School of Medicine for Women (University of London) has received a gift of £50 from the Clothworkers Company. A legacy of £200 has also been received from the late Miss Florence Davenport Hill.

ORBITAL HÆMORRHAGE WITH PROPTOSIS IN EXPERIMENTAL SCURVY.

BY S. S. ZILVA, D.SC. LOND., PH.D. GIESSEN, F.I.C.,
AND
G. F. STILL, M.D. CANTAB., F.R.C.P. LOND.,
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(*From the Biochemical Department, Lister Institute.*)

EXOPHTHALMOS or proptosis as a result of orbital hæmorrhage is an occasional but not frequent concomitant of scurvy in infants. Out of 64 cases[1] 6 showed orbital hæmorrhage, and in 5 of these there was proptosis; the proptosis in all cases was limited to the left eye. Of 11 cases recorded by various observers, 3 showed proptosis in both eyes, 3 in the right eye only, and 5 in the left eye only.

During experiments on monkeys by one of us (S. S. Z.) at the Lister Institute a similar occurrence was recently observed. On March 27th, 1919, the animal, a *Cercocebus fuliginosus*, was put on a scorbutic diet consisting of boiled rice, 250 g.; wheat germ, 50 g.; salts, 2 g.; milk (autoclaved one hour at 120° C.), half a pint daily, with the addition after July 7th of butter, 10 g. On May 21st there was reluctance to use the hind limbs. On the 27th the monkey remained in a lying position and would not sit up. Five c.cm. of unconcentrated decitrated lemon juice[2] were given and repeated the two following days. On the 29th there was some exophthalmos and hæmorrhage in the eyelids. By June 2nd under treatment with the decitrated lemon-juice the eye symptoms had almost disappeared and the legs were being used.

On omitting the lemon-juice the animal again showed hæmorrhage in the eyelids, but with further administration of the lemon-juice the monkey again became quite normal. On July 18th, after discontinuance of the lemon-juice for 29 days, the hind legs were again not used, and the next day purple discoloration of the gums about the lower incisors appeared. There was also some diarrhœa. On the 21st hæmorrhage reappeared in the upper eyelids, and on the 22nd there was marked exophthalmos of the left eye, with such extreme eversion and bulging of the conjunctiva as completely to hide the cornea; the everted conjunctiva was covered with blood. The right eye showed no exophthalmos. The animal was lying on its side unable to sit up, but apparently not in pain. Decitrated lemon-juice of double strength was given in large doses (50 c.cm.) morning and evening, and next day there was much less exophthalmos, though still inability to sit up. On the 24th still larger doses of the decitrated lemon-juice were given, 60 c.cm. of the double strength in the morning and 50 c.cm. of quadruple strength in the evening. The same day the monkey began to move its legs and sat up, and the proptosis of the left eye was greatly diminished, and subsequently disappeared in a few days.

The recovery was extremely rapid; within six hours after the first administration of the double strength decitrated lemon-juice there was a marked improvement in the general aspect of the monkey, although the individual symptoms were still pronounced.

In this particular instance the exophthalmos affected the left eye, in agreement with the special tendency to left-side affection already observed in infants; but further observations will have to show whether this special liability of the left eye holds good in monkeys. Dr. A. Harden and Dr. S. S. Zilva[3] have recorded an experiment on another monkey (*Macacus rhesus*) in which the scorbutic exophthalmos affected the right eye.

[1] Still: Common Disorders and Diseases of Childhood, 3rd ed., p. 114.
[2] THE LANCET, Jan. 4th, 1919, p. 17.
[3] Journ. Path. and Bacteriol., vol. xxii., 1919.

LITERARY INTELLIGENCE.—A new edition of Sir Edward Sharpey Schafer's "Essentials of Histology" will shortly be published by Messrs. Longmans.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A VERY EARLY CASE OF ILEAL INTUSSUSCEPTION FOLLOWING SEVERE TRAUMA IN A BOY AGED SIX YEARS.

BY C. M. KENNEDY, M.B.E., F.R.C.S. ENG.,
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THE following case is of some interest, because a very early intussusception was discovered 4¼ hours after a street accident. The discovery of an intussusception at a laparotomy undertaken on account of suspected visceral injury in a "run-over" case is certainly unusual.

T. C., a boy aged 6 years, was admitted to the East London Hospital for Children at 6 P.M. on Dec. 4th, 1918. At about 5 P.M. he had been knocked down by a motor lorry. On admission he was quite conscious. Breathing was shallow and difficult. There was bruising of the right hip, right arm, and both knees. There was subcutaneous emphysema of the upper half of the right side of the chest, both in front and behind. The right fourth and fifth ribs were fractured at about their middle. The right base was dull. The abdomen was universally rigid, and did not move with respiration. There were slight fullness and tenderness of the epigastrium, but no tenderness elsewhere. Pulse at 7 P.M., 110. He vomited three times between admission and 9 P.M. Pulse at 9 P.M., 130, feeble, and thready. (The above were the findings of the house surgeon.)

When I first saw the boy (shortly after 9 P.M.), he had already been given morphia. He looked ill. On examining his abdomen I could find no greater rigidity or tenderness than the fractured ribs, with the underlying damage to lung and pleura (as evidenced by the surgical emphysema and dullness at the base) would fully account for. Having regard to this chest injury I was very loth to operate. However, from the bruising it appeared likely that a wheel, or something heavy, had passed over the right side of the abdomen, and might have caused serious damage to the viscera. The rise in pulse-rate between 7 P.M. and 9 P.M. certainly suggested this. The house surgeon who had seen the boy before morphia had been given was confident that there was serious visceral injury. I knew not what signs the morphia might be masking, and therefore reluctantly decided to operate.

The operation was commenced at 9.15 P.M. On opening the abdomen there was no trace of free blood or fluid in the peritoneal cavity. I started on a systematic investigation of the small intestine with no expectation of finding any injury. On reaching about the middle of the ileum I discovered an intussusception little more than an inch in length, with slightly distended gut above it and completely collapsed gut below. This intussusception was easily reduced. No external evidence of injury to the gut either at the site of the intussusception or elsewhere was discovered. After the intussusception had been reduced no marked thickening, such as might have been caused by hæmorrhage into the wall of the gut, could be felt. The abdomen was closed. The wound healed per primam and the patient was discharged apparently well on Dec. 20th.

Remarks.

To me the chief interest in this case centres in its direct evidence that injury may cause intussusception. In the relatively rare cases of intussusception in children over 2 years old (and in adults) trauma may perhaps be a more common cause than is usually supposed. As a dresser I remember having seen an intussusception in a girl aged 7 years, and later as a house surgeon I saw an ileal intussusception in a boy aged 17 years, in both of whom there was a history of a blow on the abdomen. I had been inclined to regard these blows as coincidental rather than causal, even though so well-known a textbook as "Walsham and Spencer" gives trauma among the causes, for patients are very apt to explain any illness as due to some trivial trauma.

I have not attempted to search the voluminous literature on intussusception, but have contented myself with

looking up such books and articles on the subject that lay at hand. As already stated, Walsham and Spencer[1] mention "external violence" as a cause of intussusception. Adams,[2] in a review of 100 cases admitted to St. Thomas's Hospital, states that there was a history of injury in only one case. Thompson and Miles[3] make no mention of trauma as a cause of intussusception. Warren[4] does not mention it. Miles,[5] writing in "Choyce's System of Surgery," does not mention it. Walton[6] makes no mention of it. Souttar[7] quotes Elliot and Corscaden as giving trauma as a definite cause in a few cases.

It appears likely that trauma may cause an intussusception in two ways. Firstly, it may cause a hæmorrhage into the gut wall, which is then caught and forced onwards in the same way as an adenoma or an inverted Meckel's diverticulum. That hæmorrhage into the gut wall may cause an intussusception has been shown by Lett,[8] Sutherland,[9] and Collinson,[10] who reported cases caused by hæmorrhage in Henoch's purpura. The hæmorrhage caused by trauma is, however, more likely to be under the peritoneal coat, where it would not easily lead to intussusception. Secondly, intussusception may perhaps originate in a temporary local paralysis of gut caused by violence applied through the abdominal wall. Walton[6] quotes the experiments of Nothnagel in which he induced intussusception by electrical stimulus, "invaginatio spasmodica," and by inducing local paralysis by crushing, "invaginatio paralytica." As clinical illustrations of "invaginatio paralytica," Walton quotes a case following a Richter's hernia and a case reported by Sherren,[11] in which a gangrenous portion of the transverse colon acted in the same way.

It seems not unreasonable to suppose that violence applied through the abdominal wall may occasionally crush a small portion of gut so severely as to cause a temporary local paralysis and yet leave no obvious sign of injury. Such is, I believe, the explanation of the case reported here and, perhaps, of other cases where a less convincing history of trauma is given.

References.—1. Walsham and Spencer: Theory and Practice of Surgery, 1903. 2. Adams and Cassidy: Acute Abdominal Diseases, 1913. 3. Thompson and Miles: Manual of Surgery, 1909. 4. Warren: A Text-book of Surgery, vol. ii., 1915. 5. Miles: A System of Surgery by Choyce, vol. ii., 1912. 6. Walton: The Practitioner, August, 1911. 7. Souttar: The London Hospital Gazette, June, 1911. 8. Lett: THE LANCET, Feb. 20th, 1909. 9. Sutherland: Pediatrics, vol. ix., 1896. 10. Collinson: THE LANCET, March 12th, 1910. 11. Sherren: Clinical Journal, 1906.

Plymouth.

A CASE OF SYPHILITIC NEPHRITIS.

BY H. B. DAY, *M.C.*, M.D. LOND., F.R.C.P. LOND.,

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THE following case of acute nephritis complicating secondary syphilis seems worthy of record, since the response to specific treatment was unusually rapid and complete.

H. M., an Egyptian tram-conductor, aged 20, was admitted to Kasr-el-Aini Hospital on Dec. 6th, 1919, for nephritis. He stated that a fortnight previously he had begun to suffer from loss of appetite with occasional vomiting, and that a week later œdema had appeared, first in the scrotum and then in the face and whole body. On admission he presented the usual signs of nephritis. There was extensive œdema, but no free fluid in the serous sacs; the urine averaged 1000 c.cm. per diem (vide chart), had a sp. gr. 1015, and contained a considerable amount of albumin (13 per 1000 Esbach). Microscopically, there were numerous casts, granular and leucocytic, as well as bilharzia ova, with attendant blood and pus corpuscles. Over the patient's body were scattered papules of a deep coppery hue. There were snail-track ulcers on the tonsils and a barely healed hard chancre on the penis. Blood examination gave a positive Wassermann reaction. The patient admitted noticing the chancre about two months before, but had taken no medical treatment, and was anxious to conceal his disease.

Treatment consisted of intravenous injections of novarsenobillon, 0·45 g. being given on the fifth and a similar dose on the twelfth day after admission. The result was immediate and very striking. Within a few hours of the first injection the urinary flow increased four-fold and the diuresis with frequent micturition continued as shown on the chart. The œdema quickly subsided and inside a week the albumin had diminished to 1 part per 1000. Two days after the second dose of novarsenobillon, the patient had an attack of fever lasting three days which caused a temporary fall in the diuresis but did not increase the albuminuria which had so rapidly declined. A fortnight after the treatment had begun the patient insisted on taking his discharge as he felt perfectly well and could not afford to lose his employment. At this time the urine measured 2500 c.cm. per diem,

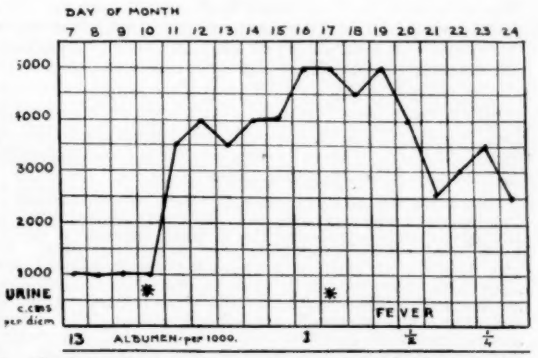

Chart showing quantity of urine passed per day in case of syphilitic nephritis. * Indicates intravenous injection of 0·45 gm. novarsenobillon.

had a sp. gr. 1013, and contained but a trace of albumin (under ¼ per 1000) with scanty granular casts. The rash had largely faded, but no effect on the bilharziasis was apparent; ova were plentiful and hatched as freely as on admission.

The diuresis appeared to be entirely derived from the retention of fluid in the body. For within the space of 12 days the patient lost 20 kilos. in weight (over 3 stone)! This amount—20 litres—closely corresponds to the excess of urine passed if we allow 2 litres a day of urine as the normal maximum output.

The immediate effect of salvarsan therapy on this patient was so striking that there can be little doubt that the nephritis was entirely syphilitic in origin. As in the majority of cases reported, nephritis appeared in the early secondary stage, about three months after infection. I attribute the success of treatment (so far as it could be carried out) to the early use of adequate doses of the salvarsan compound instead of mercury. It seems improbable that a nephritis appearing during specific treatment of syphilis would respond so favourably as this case where no previous treatment had been received.

PERICARDIAL EFFUSION FOLLOWING THE INJECTION OF ANTIDIPHTHERITIC SERUM.

BY C. WILLETT CUNNINGTON, M.B., B.C.CANTAB.

THIS case is of sufficient interest to be worth recording.

The patient, a boy, aged 10, presenting clinical and bacteriological evidence of diphtheria, was given on the fourth day of the disease an injection of 7000 units of serum. His temperature was then 101° F. The cardiac physical signs were normal. Thirty-six hours later the temperature rose to 103°. The fauces had cleared, but there had developed well-marked signs of a pericardial effusion; obvious præcordial bulging; dullness extending beyond the apex beat to the line of the anterior axillary fold. Breath sounds absent over the front of the upper lobe of the left lung. There was no pericardial friction audible at any time in the illness. The pulse-rate was 120, and its quality good and rhythm regular.

Dr. W. W. Jameson (medical officer of health for Finchley), to whom I showed the case as a curiosity, agreed in the interpretation of the signs, which suggested a passive effusion into the pericardial sac rather than an inflammatory pericarditis.

The signs of fluid gradually diminished and disappeared after ten days. The diphtheria itself proved a mild attack, and cleared up without any further complications. There was no serum rash.

Dr. Jameson informs me that he has been unable to trace in the literature any record of a similar occurrence following the injection of serum.

Church End, Finchley.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

SECTION FOR THE STUDY OF DISEASE IN CHILDREN.

A MEETING of this section of the Royal Society of Medicine was held on April 23rd, Mr. J. P. LOCKHART-MUMMERY, the President, being in the chair.

Renal Dwarfism with Bony Changes.

Mr. D. H. PATERSON read a paper on Chronic Intestinal Nephritis associated with Infantilism and Curious Bony Changes. After briefly reviewing the literature of the subject he described three cases:—

Case 1 was that of a boy, aged 11 years, who was admitted to hospital in January, 1917, for deformity of the bones of the legs and arms and inability to walk because of knock-knee. The condition had been present for four years. He was healthy at birth and breast-fed for 9 months, but afterwards kept on fluid food longer than usual since he disliked solids. He had always been fond of fruit, and had been a great drinker of water. The father and mother and the four other children of the family were all healthy, and showed no bony deformities, nor was there any family history of kidney disease. Until the age of 6 he had been quite well, but then had an illness which started acutely, and was accompanied by feverishness and vomiting. After this he did not seem so well, and at the age of 7 it was noticed that his legs were bent, and he became progressively more knock-kneed. He was treated for rickets by splints, but at 7½ years old was admitted to the local hospital, where it was found that he had kidney disease. The bones of his legs were broken and re-set, and from that time he had not been able to walk. When admitted to the Hospital for Sick Children, Great Ormond-street he was found to be a very small, pale child, and very thin. The legs were markedly deformed, with bowing outward and forward of the femora and tibiæ; there was also marked muscular wasting. An operation of double osteotomy of the femora was done and was followed by uræmia, which proved fatal. The urine, examined after operation, contained albumin and casts. X ray examination showed bony deformities. Post mortem the kidneys were extremely small and showed some cystic and fibrotic changes. The only other organ which was found abnormal was the heart, which was dilated.

Case 2 was that of a boy, aged 1 year and 9 months, admitted to hospital in September, 1919, with deformity of the ankles and wrists, which had been present for 10 months. There was no other case of deformity in the family. The boy had been breast-fed until 11 months old, and had never been able to take any solid food. When a year old he was fat and could stand, but was small. He seemed to lose power in his legs, and later it was noticed that his arms gave way also, and he had no strength in them. They afterwards became permanently flexed. After an illness in March, 1919, associated with constipation and vomiting, he steadily lost weight. When admitted he was seen to be a very much under-developed and under-nourished child, and weighed 10 lb. 8 oz. He seemed to be bright and intelligent, but did not speak. The thorax was long and narrow in shape, and there were parietal and frontal bossing, an open anterior fontanelle, beaded ribs, and Harrison's sulcus. The liver and spleen were both enlarged. The back was straight, but the limbs were extremely deformed; the femora were bowed and the patellæ rotated outwards; the tibiæ were very bowed, and the radii and ulnæ showed a like deformity. The hands were held in accoucheur position, but there was no suspicion of tetany. Respiratory, circulatory, and nervous systems were normal. Ten days after admission the child's diet was increased to solid food, including minced meat and potato. He then developed uræmic convulsions and died. Post mortem the left kidney was found to be extremely small, and appeared to be cirrhotic. The right was slightly larger, but was also abnormal, its condition suggesting old inflammation, and its capsule stripping with difficulty. Both suprarenals were enlarged. The bones showed changes typical of rickets at the epiphyses. Microscopically the sections of the kidney showed a condition of fibrosis to a marked degree, the kidney substance being replaced entirely in some areas by fibrous tissue. The arteries were greatly thickened and many of the glomeruli were obliterated. In some places the tubules showed enlargement as though in an early stage of cyst formation. The kidneys weighed about a drachm each.

Case 3 was that of a girl, aged 7½, admitted for the contracted legs and bent wrists which had been present since birth. There was no family history of a similar condition. She was a premature child, born at the seventh month of intrauterine life and had been breast-fed for six weeks, after which time she was given cow's milk and seemed to thrive quite well. She had never walked. At 3 years a tenotomy had been done as her feet were being drawn up. On admission she was found to be 34 in. in length. Her head was square and bossed. The shoulders were sloping and rounded, and the clavicles curved antero-posteriorly. There was possibly an old fracture of the right clavicle. Flexion, extension, and abduction of the shoulder-joint were all limited. The humeri were very thin. The radius and ulna on each side showed great enlargement and deformity at the lower ends, giving the impression of old fractures which had united in bad positions. The thorax was long and narrow and pigeon-chested, and the ribs were beaded. The liver reached to two fingers'-breadth below the costal margin; the spleen was just palpable. The legs would not fully extend at the hips, and there was considerable genu valgum with rotation of the patellæ outward, the knees not being able to be fully extended. The tibiæ were small and sabre-shaped, and the lower ends of the tibiæ and fibulæ were much enlarged. Dorsi-flexion of the feet beyond a right angle was impossible. The back was straight. The urine contained a trace of albumin, but no casts. Mentally the child was very backward and seldom spoke. The phenol-sulphophthalein test indicated a great retardation in the secretion of the kidney. The Wassermann reaction was negative. An attempt was made to correct her bony deformities, but the left leg was refractured while being manipulated. Two days before her death she developed fine tremors of her hands, and a large amount of albumin was present in the urine. The urea was 0·3 per cent., and the nitrogen excreted as ammonia was to that excreted as urea as 1 to 10. Creatinin equalled 8 mg. in 10 c.cm. of urine. The child became comatose and died, passing no urine during the last 12 hours of her life. The cerebro-spinal fluid was normal but for a greatly increased amount of urea. The kidneys, post mortem, weighed 12 drachms each, and the suprarenals 2 drachms each. The kidneys were cirrhotic, their capsules stripping with great difficulty, and on section several small cystic spaces could be seen. Microscopically there was marked increase of fibrous tissue throughout the kidneys and a tendency to cyst formation, the tubules being greatly enlarged and filled with colloidal material. The glomeruli were fibrosed in places.

Attention was particularly drawn to the bony deformities. These, he considered, were quite unlike those of rickets; the epiphyseal lines were straight, and the radiographs distinct from those of rickets. Below the epiphyseal lines there was a stippled appearance, which the microscope showed to be due to cartilaginous callus with partly formed bone present in the islets. The same appearance might be seen in rabbits at the site of a fracture. One explanation of the picture might be that it indicated the repair of multiple fractures by the bone throwing out cartilaginous callus at their sites. Certainly the radiograms seemed to show that there had been multiple fractures on the diaphyseal side of the epiphyseal line.

Dr. MORLEY FLETCHER said that he had not seen the type of deformity of the bones just described. He showed a girl, aged 14, who had been backward in physical development since infancy, and had suffered from polyuria. She was small, weighing only 35½ lb., with a pallid face and poor nutrition. Her intelligence was good. There were no signs of puberty, and her appearance was that of a girl aged 5 or 6. The systolic blood pressure equalled 240 mm. Hg. The left ventricle was hypertrophied, and the aortic second sound accentuated. The radial pulse was thin and wiry. The only bony deformity was a slight genu valgum. The urine was acid, its specific gravity 1010, and it contained 0·3 per cent. of albumin and a few granular casts. The *Streptococcus fæcalis* had been grown from it. Albuminuric changes were present in the optic disc, and were of some standing. Speaking of these cases generally, he said that the degree of infantilism was perhaps more marked than in any other form of that condition, but the order of intelligence was rather high. A question of interest was the significance of globulin in the urine. It had been noted in two cases. The relationship between the renal infantilism and the bony deformity was obscure. It was clear that the renal changes began either in intra-uterine life or in early infancy. Syphilis could be excluded as the cause. A possible explanation might be infection of the urinary tract.

Dr. H. C. CAMERON referred to a very early case described by Davies Colley in about 1880 under the

title "Dwarfism and Extreme Deformity." He had himself shown a case where the fibrosis was combined with a horseshoe kidney, and suggested that the two might be ætiologically associated. He had under his care at present a case which was very characteristic in appearance and with similar bony changes, but without albuminuria. A practical point had been emphasised by Barber—namely, the danger of operative interference, for uræmia was likely to follow.

Dr. F. PARKES WEBER drew attention to a group of cases included under the term diabetes insipidus in which some infantilism is present. The differences were that in this group the degree of infantilism was not very great, there was an absence of organic disease of the kidneys, the faulty organ was probably the posterior lobe of the pituitary gland, and the Wassermann reaction was often positive, congenital syphilis probably playing a part.

Suprarenal Sarcoma.

Dr. WEBER read notes of a case of Suprarenal Sarcoma of the Robert Hutchison Type.

The patient, who had been ailing since November, 1919, was a cachectic and emaciated girl, aged 5 years, with enormous enlargement of the liver and with a remarkable dark-bluish ecchymotic bilateral swelling of the eyelids. She was nearly blind from post-neuritic optic-nerve atrophy on both sides. Death occurred in March, 1920. The necropsy showed a curiously lobulated, very sanguineous, and partly necrotic tumour of the medullary portion of the right suprarenal gland, some of the cortical portion of which still persisted as an outer covering. The tumour, which microscopically appeared to be a round-celled sarcoma, was as large as a big orange, and during life was completely hidden by an enormously enlarged liver, diffusely infiltrated with the tumour-cells. Both the ovaries and many of the abdominal lymph-glands were likewise infiltrated, but the cranium was especially involved, the metastatic growth being situated chiefly between the dura mater and the inner table of the skull. The condition of the optic foramina and the orbits, affected in the same way, doubtless accounted for the ecchymotic œdema of the eyelids and the post-neuritic optic-nerve atrophy.

In regard to differential diagnosis during life, chloroma and all forms of leukæmia were excluded by the blood examination. Scurvy was out of the question. But the fact that for a month the child had been given a teaspoonful of brandy, four times daily, suggested at first the possibility that the enlargement of the liver might be due to hypertrophic cirrhosis, and that the blindness might be accounted for on the supposition that the brandy had been adulterated with methyl-alcohol.

SECTION OF ANÆSTHETICS.

Anæsthesia for Thyroid Gland Operations.

A MEETING of this section of the Royal Society of Medicine was held on April 9th, Dr. HAROLD LOW, Vice-President, being in the chair.

Mrs. DICKINSON BERRY read a paper on anæsthesia for operations on the thyroid gland. Her remarks were based upon an experience of 700 cases of operations for removal of goitre. In the past chloroform and its mixtures had been used either throughout or for induction, but since 1912 Mrs. Berry had relied entirely upon open ether and had met with no fatality and little anxiety since confining herself to that anæsthetic. She advocated an anæsthesia as light as is compatible with the requirements of the operator. Atropine is used beforehand, but morphia is disapproved of by Mrs. Berry and a slow induction is practised. The operation begins when regular breathing is established, even if the conjunctival reflex still persists. When the gland is reached ether is withheld if the patient is absolutely quiet. The eyes may open spontaneously or talking occur, the patient remaining quite motionless. Dislocation of the tumour is a dangerous process in cases of severe dyspnœa; the anæsthesia is kept specially light at this stage. Straining should occur when the last ligatures have been tied, in order to show any points which might lead to post-operative hæmorrhage. Notes of cases illustrating the above and other points were read. Two groups of cases were described as offering special danger, those with much tracheal obstruction and those with cardiac trouble. For the former it was often necessary to use oxygen with the ether. The cardiac cases included those in which the heart was affected by long-standing dyspnœa, true exophthalmic cases and cases of goitre not typically exophthalmic but associated with cardiac symptoms.

Dr. J. F. W. SILK said that "team-work" was most important in these cases, and so was a light form of anæsthesia. He had found rectal oil-ether of great value, particularly in exophthalmic cases.

Mr. JAMES BERRY said that the anæsthetist should never begin the administration for a goitre operation until the surgeon had on gloves, gown, &c., and was absolutely ready to begin. It was occasionally necessary to perform the earlier stages of the operation very suddenly and rapidly on account of dyspnœa. In cases of dyspnœa it is well to ascertain to what extent the head can be extended without serious interference with breathing, and during the operation never to let it be extended beyond this amount. It is Mr. Berry's custom to have the head held firmly throughout and only turned under special directions. In cases of dyspnœa the anæsthetist should acquaint himself before operation with the exact position and shape of the trachea. A unilateral goitre displaces the trachea to the opposite side, curves it, and flattens it on the side of the tumour. The point of maximum compression is nearly always 1½ inches below the cricoid. The dyspnœa is always due to direct pressure on the trachea, and has nothing to do with irritation of recurrent laryngeal nerves. In cases where the heart is seriously affected its condition should be ascertained by X ray and electrocardiograph examination. Mr. Berry said that he was using local anæsthetics less and less for goitre operations, and relying more and more upon light ether anæsthesia.

Dr. J. S. GOODALL thought the performance of any thyroid operation, except simple ligation, under local anæsthesia undesirable on psychic grounds. Any local anæsthetic containing adrenalin might induce auricular and even ventricular fibrillation. He had examined the hearts of many patients before, during, and after thyroid operations, paying particular attention to: (1) Degree of myocardial exhaustion; (2) amount of dilatation; (3) presence of definite myocardial degeneration; (4) height of systolic blood pressure. Electrocardiographic and X ray examination, together with mapping out of the field of cardiac response, are essential in estimating the condition of the myocardium.

Dr. J. BLOMFIELD said that he used open ether for these cases, but relied more than the reader of the paper upon preliminary injection of omnopon, scopolamine, and atropine. Many surgeons were uncomfortable if as light a degree of narcosis as that described by Mrs. Berry were employed. He related a case showing the necessity for the surgeon being ready to operate from the moment induction of anæsthesia was begun.

Dr. F. E. SHIPWAY preferred intra-tracheal ether in all goitre operations except the exophthalmic cases. All difficulties were removed by this method, particularly those due to pressure of the tumours upon the trachea, and a very light narcosis could be accurately maintained, permitting straining or coughing at the surgeon's desire. For exopthalmic cases he favoured oil-ether per rectum, preceded by large doses of morphia and scopolamine; the direct laryngoscope and catheter should be at hand.

Dr. HAROLD LOW said that the cases requiring special treatment were those in which the trachea was pressed upon and those with constitutional symptoms. He considered the ideal anæsthetic to be either intra-tracheal or rectal ether; next to these he placed open ether used to maintain a light degree of narcosis. Only skilled anæsthetists should undertake goitre cases.

Dr. F. S. ROOD divided goitre cases into three groups: (1) simple tumours or cysts with no respiratory obstruction and no toxæmia; (2) patients with stridor and possibly definite respiratory obstruction and heart failure; (3) cases of exophthalmic goitre. In the first group there is nothing special about the anæsthetic. In the second group he preferred chloroform to ether; in the exophthalmic cases he though it most important to guard against the element of fear; a preliminary injection of morphia and scopolamine was most useful.

TUBERCULOSIS SOCIETY.

AT a general meeting of this society held on April 26th, with Dr. H. DE CARLE WOODCOCK in the chair, Dr. CLIVE RIVIERE read a paper on

Some Thoughts on the Treatment of Pulmonary Tuberculosis.

He begged to be forgiven if, in attempting to provoke thought, he appeared to wander superficially over a very wide subject. The world in general had recently been talking of the failure of sanatorium treatment. The sanatorium had not been a failure, but was a definite and successful method of obtaining a cure. The rest and exercise practised in these institutions caused auto-inoculation. This, under medical control, raised tolerance, and was nature's own method of obtaining a cure. The downward progress of uncontrolled cases was due to excessive auto-inoculation which did not stimulate a beneficial immunising response. Sanatorium treatment as practised was too short, but in spite of this many cases returned arrested. If given the opportunity the cases would be legion which would respond to this treatment. It is after the patient's return home that the sins are committed, when, owing to the lack of any after-care system, he returns too soon to unsuitable over-strenuous work and passes out of control. The gains made in sanatorium in this way fail to be consolidated and the institution receives the blame. Cases must be obtained early and Dr. Riviere was of opinion that many patients with hilus disease had been treated in the early stages as neurasthenics. After-care was one of the most difficult problems, because the patient resents any further control after his return home. The system, however, is essential because the ultimate permanent cure is a matter of years, not months.

Graduated exercise was first started in Germany at the sanatorium of Brehmer. This was followed by Dettweiler, who preferred to call his method graduated rest. Much controversy and two distinct schools of thought had resulted; the one in favour of exercise in preponderance, the other in favour of an excess of rest. In this country, probably as a result of following Otto Walther, of Nordrach, the exercise treatment had predominated and it had been further developed by Paterson at Frimley. Graduated exercise should in any case only be commenced when cases become afebrile; fever must be controlled by rest. Both are essential, but where the two meet is still a matter for investigation. The vigorous exercise régime is more suited to the English temperament, but each case must be considered on its merits.

Recently the treatment by reactions from exercise and tuberculin had extended to the use of chemical agents. Gold, copper, arsenic, nickel, and cobalt had all been tried with no very definite results. Specific action upon tuberculous tissue had not yet been proved. The cacodylates caused marked primary and secondary reactions with apparent improvement. It was questionable whether copper exercised any selective action upon tuberculous tissue and gold certainly did not, but it appeared probable that improvement occurred as a result of the class of case treated and did not depend upon the drug used. It has been claimed that antipyretics in small doses raise tolerance, but this is probably due to reduction of fever causing improvement in general condition and better appetite. These results would be quite well obtained by exercise, but here difficulty arose in control.

Discussion.

Dr. H. A. ELLIS said that in Coolgardie Sanatorium, Australia, exercise had proved almost universally bad, because of the high atmospheric temperature. In Middlesbrough the opposite had been his experience. He had found the condition of the skin an excellent guide to the amount of exercise to be allowed. In the early-age cases of Brownlee exercise was universally bad. Tuberculous cases could be divided into three classes: hypersensitive, sensitive, and subsensitive. Copper when injected intravenously combined with hæmoglobin and became inactive. He considered that it exerted a definite specific action upon tuberculous tissue.

Dr. HALLIDAY SUTHERLAND thought that rest treatment was run to death in Switzerland. There was an excellent increase in flesh, but no solid improvement in the disease. Sanatorium treatment was sufficient without adjuncts. He had tried copper without benefit. If a cure was to be a proved success it must be effective in all cases, including the advanced; no selection must be made. The fall in temperature in using colloidal copper was due to the peptone contained in it; it was doubtful what the active principle was.

Dr. L. J. SHORT said that as patients were unwilling to carry out treatment for a sufficiently long period in a sanatorium, an after-care labour colony became an indispensable part of the scheme.

The CHAIRMAN said that he had recently tried the effect of producing an extra-costal pneumothorax effect, by applying sandbags to the affected apices; but it was too soon yet to determine the results. He considered in X ray photographs that striæ, extending to the base of the lung, might be disregarded, but those extending to the apex were usually significant of a bad case.

Dr. RIVIERE briefly replied.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF MEDICINE.

Senile Urticaria Pigmentosa.

A MEETING of this section was held, with Dr. G. PEACOCKE, the President, in the chair, when Dr. M. DRUMMOND showed a case of Senile Urticaria Pigmentosa of 15 years' duration in a man aged 68. The condition, well seen on the arms and trunk, consisted of closely-set macules and plaques, the latter up to two shillings in size, pink, red to deep violet, disappearing on deep pressure. The duration of the individual lesions varied from half an hour up to several months. Factitious urticaria was marked, itching very slight. As the disease is usually limited to very early life, this case was not at first thought to be urticaria; the diagnosis lay between that and the erythemas. The patient was examined by Dr. Wallace Beatty, who had a similar case in an adult in 1919. Sections of skin were examined by Dr. W. D. O'Kelly, who reported the presence in large numbers of mast cells in the skin—a condition regarded as pathognomonic by Brock, Unna of Hamburg, and Gilchrist of Johns Hopkins Hospital. The patient suffered also from auricular fibrillation and was treated by Dr. G. Nesbitt, who showed slides of tracings taken to demonstrate the condition.

Dr. BEATTY stated that he had seen a similar skin condition in 1919 in a healthy man of 32, the trunk and extremities being affected; duration ten years. Condition had been first noticed on the upper part of the chest, and spread gradually—the face, hands, and feet being spared. There was no irritation. The majority of spots were brownish in colour and not altered by pressure. At first sight the condition suggested a syphilide, negatived by history and duration. According to Darier it usually occurs in infants, and tends to disappear in eight to ten years. In 1905, at the French Society of Dermatology, the speaker had stated that the affection might begin in adult life, and was often a family condition. He had then showed slides of microscopic sections of skin showing numerous mast cells, also photographs of the condition in adults and in an infant.

Dr. WALTER SMITH objected to the name senile urticaria pigmentosa.

Dr. O'KELLY stated that he had never seen such large numbers of mast cells packed with basophile granules. There was no special distribution of the cells.

Dr. W. M. CROFTON suggested that cultures should be made from fluid obtained by blistering affected areas.

Dr. E. M. MAXWELL then showed a patient with Pituitary Tumour and Dr. H. F. MOORE read a paper on Diabetes Mellitus with Acidosis.

SECTION OF OBSTETRICS.

A MEETING of this section of the Royal Academy of Medicine in Ireland was held recently, when Dr. E. H. TWEEDY, the President, read a paper on

Tubal Sterility.

The PRESIDENT showed his instruments for passing catgut through the tube. He said that a fine stiff needle with a blunt point should be used. It should pass first through the ovary, where the catgut should be knotted, then through the tube, and then through the mucous membrane. Mucous membrane should be sewn to mucous membrane. In every case of sterility the tubes, even though apparently normal, should be tested for permeability by the air test. The impervious part should be cut away. It had been suggested that the short tube would prevent pregnancy, but he had seen pregnancies in women whose tubes were certainly not more than 1½ inches long.

Dr. B. SOLOMONS said that Dr. Tweedy had dealt not so much with tubal sterility as with sterility in women with long tubes. He would feel very diffident about resecting tubes just because they were long. He blew them up with air when there was a kink and resected them not on account of length but because of disease. In excision for length did Dr. Tweedy get the excised part examined microscopically? The removal of the uterine ends of both tubes in these cases was a big undertaking in view of the difference in bore of the parts to be brought into apposition, that of the smaller end being only 1/25th of an inch. The instruments, he thought, would prove very useful. When resecting a tube he did not use forceps, but had special needles, the ends of the tubes being held one by him and one by an assistant, in an end-to-end anastomosis. But Dr. Tweedy was dealing with resection of the uterine ends of the tubes. This question of sterility embraced all the pathological conditions in the tube. Since October, 1919, he had seen many cases to prove that the tubes were usually at fault—many without gross lesions. It was difficult to know what to do in these cases. If the abdominal end was diseased, a new osteum should be made and the fimbriated ends removed; if the middle part, an end-to-end anastomosis, for which he used a long straight needle, resecting the tube when catgut had been passed through the lumen. In cases of disease of the uterine end the prognosis was very bad, especially if the condition was bilateral. He wanted to know what part of the ovary the catgut passed through before going through the tube, and if this step were necessary. He thought any ova in the neighbourhood should find their way into the tube without help.

Dr. S. SHEILL said that the first thing to prove was that a woman was really sterile, or successes might be claimed which were not earned. He was not sure that dilatation of the tubes with air was a sufficient test of the condition of the tubes. The only proof of sterility was a microscopic examination of the parts removed. With regard to the passage of the needle, if a false passage were made at the uterine end, it was possible that the epithelium would follow this false passage, especially if chromicised gut were used instead of ordinary six-day catgut.

Dr. H. JELLETT, the Master of the Rotunda, said that the apposition of the wide and narrow parts of the tube was the great difficulty.

The PRESIDENT, replying, said he hoped that by next year the technique of the operation would be greatly improved. Dr. Solomons dealt with the long tube. What he said was not that a long tube should be resected, but that a long tube which was obstructed, as most long ones were, should be resected. He had observed the greatest difference in the calibre of tubes in different individuals. As regarded the microscope test, serial sections would have to be taken of the 1½ inches of tube removed, and the obstruction might only be $\frac{1}{100}$ of a millimetre. He thought the method employed by Dr. Solomons would lead to tubal pregnancy, as it had done in one case already, and also in one of the speaker's own cases where this method was employed. He described this case, in which he resected one tube for concretions, the other being fairly normal. The patient had a fixed retroversion. An end-to-end anastomosis had been done, and the patient returned to Steevens' Hospital still sterile. The abdomen was opened, and the anastomosis was found to have given way and the lumen to be closed. The tube was again resected and the woman appeared at the Rotunda Hospital with a tubal pregnancy on the side of the resected tube. It was possible to pass a big sound through the fimbriated extremity to the uterus, and the probe could pass over the ovum into the uterus. The other tube would not let anything through; therefore the technique was at fault. A continuity of epithelium was absolutely necessary.—Dr. SHEILL asked, if that were so, why did not ligating the tubes for the purpose of making the woman sterile prove successful?—The PRESIDENT: No such case had been reported in Dublin. Dr. M. J. Gibson and Dr. Solomons both got cases of tubal pregnancy. He used to agree with Dr. Solomons that this was due to inflammation, but now believed that the lack of epithelial continuity was at fault. Blair Bell had had a case of pregnancy after stitching the fimbriated extremity to the cornu of the uterus.

ROYAL MEDICO-CHIRURGICAL SOCIETY OF GLASGOW.

Exhibition of Cases and Specimens.

A MEETING of this society was held on April 16th, Mr. A. ERNEST MAYLARD, the President, being in the chair.

Dr. G. HERBERT CLARK showed the two patients referred to in his communication to the society[1] of March 19th.

Dr. J. SCOULER BUCHANAN and Dr. WALTER W. GALBRAITH showed two cases of Articular Effusion into Both Knee-joints due to Congenital Syphilis. In the first case, that of a previously healthy boy aged 11, the only symptom had been a feeling of tiredness in the legs with little or no pain, and swelling of the knees without tenderness or restriction of movement. However, he showed keratitis fissures about the mouth and pegged teeth. Both he and his father gave a positive Wassermann. In the second case, a boy aged 13 years, stiffness and swelling of the knee-joints were first complained of after a fall from a height on to his knees. Beyond a slight degree of "sabre-blade" tibiæ the boy showed no evidence of congenital syphilis, but both he and his father gave positive Wassermanns, and his mother gave a suspicious reaction.

Mr. ARCHIBALD YOUNG showed a case of Volkmann's Ischæmic Contracture of the Forearm, treated by manipulation and splinting. The patient, a boy, aged 11 years, was admitted to hospital in March, 1918, for a simple fracture of both bones of the forearm slightly above the middle. The arm and forearm were put up on an anterior (flexor) splint of moulded metal bent at right angles at the elbow (the forearm being fully supinated), supplemented by a corresponding moulded poroplastic splint applied to the extensor aspect of the forearm only. Six days later, on account of pain at the elbow and disability in finger movements, the splints were removed and put up less firmly. By March 22nd there was well-marked tendency to contracture of the fingers, and, in spite of massage and passive movement, by Oct. 26th the patient had well-marked ischæmic contracture (Volkmann) and atrophy of all the muscles of forearm and hand, and was readmitted to hospital. Under an anæsthetic the four fingers were separately stretched and fixed fully, or almost fully extended, in individual moulded splints made of sheet tin, covered with lint. Maintenance of the palmar flexion of the wrist was obtained by a long metal splint and fixed on the extensor aspect of forearm and hand. A fortnight later the splints were readjusted, flexion at the wrist reduced, and extension at the metacarpo-phalangeal joints increased. After another fortnight a similar process was carried out. Twenty days later the fingers and wrist were freely manipulated and splints reapplied with the contracture almost fully corrected, and 16 days later the special finger splints were discontinued, a splint dorsiflexed at the wrist being applied on the palmar aspect of forearm and hand. Each readjustment of splints was carried out under general anæsthesia. Less than a week later this long splint was also removed and massage and electrical treatment were instituted. More than a year later the function of the limb was very good, but there was still disparity in muscular development of the two forearms, particularly as in the flexor-pronator groups. There had been slight recurrence of the contracture, mainly of the flexor profundus. The speaker said that it might yet be desirable to renew the splinting for a time, but the final result would be most satisfactory.

[1] THE LANCET, April 10th, p. 817.

The PRESIDENT showed a specimen of Maier's Funnel-shaped (Trichterförmig) Hypertrophic Stenosis of the Pyloric Orifice removed by operation from an adult. The patient, a woman aged 36, was very thin, with abdomen somewhat distended, and a firm, movable mass, rather tender, palpable in the right iliac region. She gave a history of rapidly increasing emaciation, constipation, and latterly of pain in the right hypochondrium, followed by vomit shortly after taking food. On operation a freely movable pyloric tumour was found, associated with a greatly dilated stomach. In the belief that this was a growth, the pylorus with half the stomach was excised, and a posterior gastro-jejunostomy performed. The patient did well for four days, but later died of double pneumonia. The pathological report on the specimen stated that there was stenosis of the pylorus with marked hypertrophy of the muscular ring; no evidence of new growth or of recent or healed ulcers. Microscopical examination showed regular tubular glands and hypertrophy and a diffuse interstitial fibrosis of the muscular tissue.

NORTH OF ENGLAND OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.

Expectant Treatment in Eclampsia.

A MEETING of this society was held at Leeds on April 16th, Mr. MILES H. PHILLIPS, the President, in the chair, when Mr. W. GOUGH (Leeds) gave an analysis of 61 cases of eclampsia at the Leeds Maternity Hospital during the last ten years. The average age of the patients, of whom 47 were primiparæ and 14 multiparæ, was about 26 years. Multiple pregnancies occurred three times and hydatid mole once; in one case only was there a history of previous eclampsia. Mr. Gough brought this subject before the society with a view to advocating the expectant method of treatment. In 5 cases the pregnancy was artificially terminated, and of these 2 died. In the remaining 56 cases the only treatment adopted was expectant, on the lines advocated by the Dublin and Glasgow schools. In a few cases delivery was hastened by forceps late in the second stage, but this was the only operative treatment. In 9 cases the fits commenced post partum, and of these 1 died. Of the remaining 47 cases 5 died, excluding 1 case where death was caused by a perforated gastric ulcer. As regards the children, in the cases where labour was induced, one child was born alive and four stillborn. Where no operative interference was carried out 24 were born alive and 21 were stillborn; in one the pregnancy was a hydatid mole, and the remaining case recovered from her eclampsia and went home undelivered. Mr. Gough was therefore convinced that much better results were obtained for both mother and child if labour was allowed to come on spontaneously.

The PRESIDENT congratulated the Leeds Maternity Hospital on their excellent results. The maternal mortality was much lower than any figure he had seen published hitherto. At the Jessop Hospital, Sheffield, Dr. J. Chisholm had looked up the cases and found that the mortality over a similar period was nearly 25 per cent., the total number of cases treated being 177. However, it varied very much from year to year. He thought Cæsarean section good treatment in carefully selected cases, and had obtained several very satisfactory results therefrom.

Dr. J. W. BRIDE (Manchester) had analysed the cases treated at the St. Mary's Hospitals, Manchester. During the last ten years 220 cases were admitted, and the mortality was nearly 33 per cent. The figure varied much from year to year, in one year being as low as 12 per cent., and it was of interest that in that particular year the pregnancy was generally terminated by rapid dilatation of the cervix and immediate extraction.

Dr. J. B. HELLIER thought that Cæsarean section was sound treatment if carried out by competent operators and in suitable surroundings. Where this was not possible the expectant method was much safer.

Dr. DANIEL DOUGAL (Manchester) was of the opinion that cases varied so much in type that one method of treatment was not always the best. He had tried Cæsarean section with disappointing results in cases chosen because of their severity. He thought it possible that Cæsarean section might give the best results if carried out in every case at an early stage of the disease.

Dr. GOUGH briefly replied.

AN ordinary meeting of the West London Medico-Chirurgical Society will be held to-day (Friday) in the society's rooms, West London Hospital, at 8.30 P.M., the President, Dr. Herbert Chambers, in the chair, when a paper will be read by Mr. Sydney G. MacDonald on Tuberculous Affections of the Urinary Tract.

Reviews and Notices of Books.

GYNÆCOLOGY FOR STUDENTS AND PRACTITIONERS. Second edition. By T. W. EDEN, M.D., F.R.C.S. Edin., F.R.C.P., Obstetric Physician, Charing Cross Hospital; and CUTHBERT LOCKYER, M.D., B.S., F.R.C.P., F.R.C.S., Obstetric Physician to Out-patients, Charing Cross Hospital. London: J. and A. Churchill. 1920. With 513 illustrations and 24 coloured plates. Pp. 928. 38*s*. net.

IN the revision of the second edition of their book the authors have added to the section on ovarian gestation. Stress is laid on the distinctive naked-eye appearances of an ovarian molar pregnancy, especially on the sharp line of demarcation between the cap of ovarian tissue overlying the mole, a dark plum-coloured cyst with smooth walls. A description has been added of epispadias, hypospadias, and ectopia vesicæ in the female. A section is also devoted to a description of the operative procedure appropriate for a case of epispadias. There are some alterations in the section on ectopic gestation, including an account of the rare occurrence of a multiple pregnancy in an ectopic gestation.

In considering the after-results of the operation of extended abdominal hysterectomy for cancer of the cervix the authors call attention to Weibel's statistics showing that recurrences may take place in some 7·7 per cent. of such cases between the period five to seven years after the operation. They estimate the relative percentage operability of vaginal hysterectomy to that of the extended abdominal operation at about four to one. Some new matter has been added in the section dealing with the enucleation of broad ligament cysts. In our opinion, if it is necessary to drain through the posterior vaginal fornix because the bleeding cannot be completely controlled, it is better to use a gauze plug rather than the rubber tube recommended by the writers. The operative treatment for dealing with a rectocele has been inserted and a few minor alterations in response to some criticisms on the first edition have been incorporated. There are five new coloured plates illustrating unruptured tubal pregnancy and a retro-uterine hæmatocele, kraurosis vulvæ, erosion of the cervix (the legend spoilt by the needless addition of the misleading name pseudo-adenoma), endocervical and corporeal cancer, and a fine plate of a lipoma of the broad ligament.

A very good book, but—we must add—unfortunately growing too large for the student to read, even if not too large for the specialty with which it deals.

A TEXT-BOOK OF OPHTHALMIC OPERATIONS. Second edition. By HAROLD GRIMSDALE, M.B., F.R.C.S., and ELMORE BREWERTON, F.R.C.S. London: Baillière, Tindall, and Cox. 1920. Pp. 438. 18*s*.

THERE are two objects which a book of this sort may be expected to fulfil: first, fully to describe those operative procedures which the author as the result of his experience believes best calculated to attain the desired ends; secondly, to give an intelligible though not detailed account of so many of the other operations which are practised or have been described as may conceivably be of use to the ophthalmic surgeon. A book such as Meller's, in which the former object is prominent, makes the more interesting reading, but the latter object has its importance also. The young ophthalmic surgeon, if he is wise, will never undertake an operation without taking trouble to understand the advantages and drawbacks of the various procedures and modifications adopted by different operators. In the second place, having decided on the particular method which he means to adopt, he will read up a full description of this method, not entirely trusting to any text-book but consulting original papers. The

extent to which the text-book of Grimsdale and Brewerton attains this double object is very considerable, and it is not the least of its merits that at the end of each chapter a list of references is given to the original descriptions of the operations summarised in the text. This feature cannot fail to be useful to every ophthalmic surgeon who has access to a library.

The first edition of this book appeared in 1907, and the advance in the technique of ophthalmic surgery amply justifies a new edition. There is not a chapter in which new matter of importance is absent. The great advances in the operative treatment of glaucoma in recent years have necessitated the entire rewriting of this chapter. The new methods for dealing with contracted sockets by means of "epithelial inlays" and for providing new eyelids by means of "epithelial outlays," which were evolved during the war, are also described. The removal of foreign bodies from the interior of the globe is another subject on which much experience has been gained during the war, and a new chapter describes the methods of using Haab's magnet, the ring magnet, and the small magnet.

In all, some ninety pages of new matter have been added, but the book remains eminently practical, and scant space is devoted to operations, which, in the authors' opinion, are useless, such as many of those devised for the cure of detached retina. The illustrations are diagrammatic but intelligible. We could wish for more pictorial help in the case of some of the more important operations, notably trephining for glaucoma. The book is a good and practical guide to operative procedures on the eye.

LA GÉNÉRATION HUMAINE.

Ninth edition. By Dr. G. J. WILKOWSKI. Paris: A. Maloine and Son. 1920. With 3 coloured plates and 108 illustrations in the text. Pp. 224. Fr.22.

THE ninth edition of this popular work has been brought up to date by the inclusion of recent advances in our knowledge of the anatomy and physiology of the urogenital system. A postscript on organo-therapy has also been added, and we gather from this that our French colleagues have utilised the various glandular extracts to a far greater extent than we have. Unfortunately we cannot comment on the success which has attended their efforts, for the results are not recorded.

The author is careful to point out that the book is not intended to replace the usual text-books on the subject; and as an adjunct to them we feel that this book is most useful. The fact that it has been translated into Spanish and Finnish shows that its popularity is not confined to France. Historical anecdotes abound in the work, and make it more attractive than the ordinary text-books on the subject. The illustrations are good and the coloured plates excellent.

HANDBOOK OF ANÆSTHETICS.

By J. STUART ROSS. Edinburgh: E. and S. Livingstone. 1919. With illustrations. Pp. 214. 7*s.* 6*d.*

ALTHOUGH there are many little books on anæsthetics this addition to their number is welcome, for it is eminently readable. It is less taken up with detailed description of apparatus and of procedure than are most similar works, and for this reason is more pleasant to peruse though, perhaps, it loses in the same degree in usefulness to the beginner. The general principles which should guide the anæsthetist are clearly laid down, and he is made to understand them by an excellent account of the physiological knowledge on which those principles are based. In this chapter the author draws attention to a fact that is often overlooked. In describing the fall of blood pressure that accompanies narcosis he shows how this is due to some extent to the anæsthesia, comparable with the fall in natural sleep, apart from the action of the anæsthetic drug *per se*. Profiting by recent experience Mr. Ross gives an account of the treatment of shock among the casualties of the war. Discussing the causation of stridor the author expresses his belief that it may be due to morphine given prior to anæsthesia. He gives a capital account of the causation and the prevention and treatment of asphyxia. Mr. Ross evidently values and uses frequently the mixture of chloroform and ether (C_2E_5), and gives detailed directions of the correct way to employ it in conjunction with and in aid of "open ether." He approves of routine administration of morphine and atropine before anæsthesia. In the account of rectal administration of ether he does not, we think, lay stress enough on the slowness with which the injection should be given, and on the time that should be allowed to elapse if the best result is to be obtained. The mixtures of nitrous oxide and ethyl chloride have a small chapter to themselves. They appear to be more in favour in Edinburgh than in most other places; yet they are of undoubted service in dental practice, and might be more frequently employed with advantage. Brief chapters on local and spinal anæsthesia are contributed by Dr. Quarry Wood, one on intratracheal anæsthesia by Dr. Torrance Thomson, and an introduction by Dr. Alexis Thomson.

HANDBOOK OF PHYSIOLOGY.

Fifteenth edition. By W. D. HALLIBURTON, M.D., LL.D., F.R.C.P., F.R.S., Professor of Physiology, King's College, London. London: John Murray. 1920. With nearly 600 illustrations in the text, many of which are coloured, and 3 coloured plates. Pp. 936. 18*s.*

THE last edition was issued in 1919, and about nine months thereafter the author received an urgent request to prepare another and this is the result. The new anatomical nomenclature and the appendix on War Diet (the latter written in July, 1918) are still retained. The author states that the changes are of "a minor kind." This we substantiate after comparing generally the present edition with its immediate predecessor. The number of pages, the pagination, and number of illustrations are unaltered. The only change in illustrations we noticed is on p. 337, where a figure of the structure of the thyroid and parathyroid gland is substituted for one of the thyroid. As to the text itself we have been able to discover only very minor changes, such as those on p. 342, on the suprarenal gland; on p. 464 a slight change in the description of hæmopyrrol, and a few lines added on p. 504 about reflex secretion. The reference to vitamines on p. 905 of both editions is not mentioned in either index. Obviously this work retains its well-deserved popularity, and it is well entitled to, even though we failed to find an exposition of the more recent discoveries about "shock," intravenous injection of gum arabic, or any references to the work of Cushny on renal secretion.

LA PHYSIOLOGIE.

Par MAURICE ARTHUS, Professeur de Physiologie, Lausanne. Paris: Masson et Cie. 1920. Pp. 430. 10 francs.

THIS is in no sense of the word a text-book, nor does it pretend to replace or even complete such a work; rather is it written to expound the actual state of the science, to mark its successive stages of development, its methods, its results, and to indicate the lines along which progress in the future is to be anticipated. The author found his inspiration one day long ago in the romantic region of Sainte-Geneviève, in the Quartier Latin, on reading Claude Bernard's "Lectures on Physiology Applied to Medicine." First, the bald anatomical facts and the obvious movements of the body as they can be observed and studied by the unaided eye are attractively and clearly described—the chiefly physical facts being first dealt with—movements of the pupil, respiratory, heart, intestinal movements, and so on. Then follows the application of the graphic and photographic methods to the study of mechanical facts. The experimental method and its results are described, the importance of the animal selected being emphasised. Much attention is given to the effects, immediate and remote, of removal of organs, the suppression and modification of the functions of organs by drugs, cutting off the circulation, and other means. Excitation and stimulation of various kinds and of different

organs are described, and then various "experimental devices," such as fistulæ, grafting, and their results. In this chapter the author describes Beaumont's famous observations on Alexis St. Martin, as being made by "Elie de Beaumont," a strange mistake for plain William Beaumont. After experimentation come interpretation and explanation of the results, with numerous instances and astute discussion and examples of analysis of experiments. A short excursus is made into the realm of pathology, cell life, physico-chemical phenomena, nervous and humoral mechanisms, including the hormone doctrine, and so on to the study of intoxications, which chapter brings this charming exposition to a close. The work is written in such clear, idiomatic, easily understood language, that it might well be read by anyone wishing to improve his knowledge of French, apart altogether from the fascinating coup d'œil which it gives of "la Physiologie" as the basis of medicine and hygiene. French writers have a genius for lucidity, but M. Arthus possesses this admirable quality in quite an exceptional degree. We have enjoyed both its comprehensive and critical survey and its lucid exposition.

PHYSIOLOGIE NORMALE ET PATHOLOGIQUE DES REINS.

Second edition. Par L. AMBARD, Professeur à la Faculté de Strasbourg. Paris: Masson et Cie. 1920. Pp. 368. 18 francs.

THE general plan of this monograph remains the same as when it was reviewed in THE LANCET of July 11th, 1914. The title might lead one to suppose that Professor Ambard had written an ordinary text-book on renal function. Not so, for this is rather a personal contribution to certain aspects of the subject. There is an extensive array of observations made by the author himself and some of his colleagues, first on the physiological side as to elimination by the kidneys by a process of diffusion of various alcohols, acetone, and chloroform, and more especially of experiments to determine the maximum concentration of urea, and the limits and variations of elimination by secretion of ammonia, iodine, SO_4, methylene-blue, glycerine, glucose, chlorine, water, and other substances. The author attempts to find a mathematical expression for the limit regulating the extent of each of these excretions, and seeks to explain how excrementitious substances do not accumulate in the blood, and how the blood maintains nearly a uniform composition. To this end the kidney is an organ which acts for the most part autonomously, indeed, as if it were not in relation with the central nervous system. About one-half of the text is devoted to various forms of nephritis; the author abandons the old histological classification and adopts that of Widal, which is explained in the text. The phenomena attending nephritis with œdema, azotemic nephritis, and mixed forms of nephritis are described, together with data for their prognosis. A short but important chapter which should be studied by surgeons is that devoted to the exploration of the renal functions in urinary surgery. This monograph embodies a large amount of research along specific lines, and is intensive rather than extensive in its application to clinical medicine, and as such will be specially interesting to those whose work lies in the domain of diseases of the kidney.

ANNALS OF MEDICAL HISTORY.

Vol. II., No. 2. Summer Number, June, 1919. New York: Paul B. Hoeber. Pp. 93–212. $2.50.

A PUBLISHER'S note informs us that "the publication of this issue has been greatly delayed by the recent printers' strike in New York City," which accounts for a somewhat belated notice of the same. The greater part of the number is devoted to papers dealing with Sir William Osler, who attained his seventieth birthday in July, 1919. Three of the papers, written during Osler's life, are respectively by Dr. Howard Kelly, Dr. John Ruhrah, and Dr. Fielding H. Garrison, and set forth the reasons why there is such a widespread desire to commemorate Osler's seventieth birthday, his influence on medical libraries, and his contributions to medical literature. In the fourth Dr. Harvey Cushing is able, owing to the delay in publication of the journal, to set before its readers a "laudatio" of Osler which is an admirable picture of the man and one, moreover, which shows that the biographer has no small portion of his subject's spirit. All the other articles contributed to the number under review are good, more especially "A House Surgeon's Memories of Joseph Lister," by Sir StClair Thomson, Sir D'Arcy Power's "The Oxford Physic Garden," and Major Reginald Fitz's "Napoleon's Camp at Boulogne." The last paper, with its interesting account of the medical organisation of the camp, shows yet once more Napoleon's astonishing faculty for taking pains about details.

THE MISADVENTURES OF ATHELSTAN DIGBY.

By WILLIAM FRYER HARVEY. London: The Swarthmore Press, Ltd. 1920. Pp. 191. 6s.

Athelstan Digby is a prosperous Yorkshire manufacturer, a bachelor, and a good citizen, whose keen enjoyment of life and undiminished mental energy at 55 years of age lead him into all kinds of innocent and entertaining adventures. The interest of the book from the medical point of view is the internal evidence that the author is himself a medical man. The comparison between the dietetic habits of the squire who "drank port, and his headaches were in the morning," with Digby's brother who, "a teetotaller and a somewhat immoderate eater, usually had his headaches at night," betrays professional knowledge as well as the description of the circumstances which led up to Mr. Digby passing an hour or two on a stretcher in the hospital mortuary, where "Simeon" performed operations, "very neat; large, clean incisions, and no anæsthetics." The book will agreeably fill up a leisure hour.

THE LINK BETWEEN THE PRACTITIONER AND THE LABORATORY.

By CAVENDISH FLETCHER, M.B., B.S. Lond., and HUGH MCLEAN, B.A., B.C., D.P.H. Cantab. London: H. K. Lewis and Co. 1920. Pp. 91. 4s. 6d.

THIS little book is intended to guide the practitioner in his relations with the pathological laboratory. The diseases whereto pathological examinations are applicable are arranged in alphabetical order, and the various tests are cited with directions as to collection of specimens, the minimum times which should be allowed to the laboratory in cases of urgency, directions as to postage and packing, and so on. On the whole, the advice given and choice of tests are sound, although a number are quoted which are by no means generally accepted by pathologists of standing, such as the Arneth count and the determination of the coagulation-time of the blood. The presence of the pathologist at the bedside is advised in certain cases, but the essential value of making cultures direct from the lesion is by no means always clearly emphasised, a most vital matter in cases of influenza for instance. The influenza bacillus only lives for about half an hour outside the body. Very false ideas of the relative proportions of germs in culture may be arrived at in posted specimens. Mackey[1] found that immediate plating of post-nasal secretion yielded pneumococci 1000 colonies and 8 colonies of staphylococci, whereas the same swab posted and plated next morning yielded almost exactly the reverse proportions. When the pathologist comes to prepare his vaccine the importance of early plating is at once apparent. The initial vaccine doses recommended at the end of the book are in some cases obsolete; 2½ millions of pneumococci is one of these. Staphylococcal and gonococcal sera are, we believe, also useless therapeutically.

However, a book of this kind is badly needed. The present volume is fairly up to date, especially on the chemical side, although it does reveal, in all its nakedness, the failings of any scheme where the pathologist and his laboratory are not in close proximity to the practitioner and his patient.

[1] Mackey, J. F.: Brit. Med. Jour., August 9th, 1918.

THE LANCET.

LONDON: SATURDAY, MAY 8, 1920.

The Human Side of Industrial Efficiency.

PROGRESS in human affairs, if it is to be sure, must be based upon knowledge, and three stages are required to ensure advancement. First, knowledge must be acquired by laborious and painstaking research and investigation; then the knowledge acquired must be made known to those who can use it; lastly, it must be given practical application. Each step is of equal value to progress, whether that progress be economic, political, industrial, or medical. Not infrequently the acquirement of knowledge through research proceeds without reaching the field of practical application and, lying hid, becomes barren of results until, maybe at some distant date, it is dragged into the light of day. For this reason the double step of making known to the research worker what problems require elucidation, and of making known to those who want the knowledge what the research worker has found out, is one of fundamental importance. Yet for the most part it is not taken in either direction. A feeling is abroad to-day that, quite apart from the inconsistencies in the body-politic which have sprung up in modern society as a result of the industrial revolution, much ill-being and discontent exist which are due to lack of scientific knowledge as to the working of the human machine. "The living human body is surely," said Sir JAMES PAGET, "the most complex mass of matter in the known world"; it reacts in unexpected ways to new conditions; and has a habit of protesting vigorously when these conditions disturb the rhythm of existence. It reacts not merely as a physiological unit, but as a psychological entity, and must be studied from both points of view. The field of national welfare most concerned is that of industrial employment; in the past the attention of those who control the practical side of industry has been concentrated upon the processes of production, the invention of machinery, the improvement of plant, to the almost entire disregard of any study devoted to the human agency required to animate the whole. Here is vast promise of additions to knowledge. Research is in the first place needed into the working capacity of man, his liability to fatigue and to consequent ill-health, his physiological and psychological reactions to environment as represented by fresh air, hours of work, personal hygiene, cleanliness, and temperature. Action in this direction is already assured in this country through the work of the Industrial Fatigue Research Board, which is now definitely established and attached to the Medical Research Council. Thus we are in a better position than other countries. France, it is true, has appointed the Institut d'Hygiène Sociale and the Direction des Recherches Scientifiques to carry on work, but the activities incline to be restricted to laboratory experiments. In America the early promise given by the appointment of a Committee on Industrial Fatigue is not bearing fruit; information, the result of inquiries conducted in various industries by the investigators of the Board, is being published from time to time; but the seed falling by the wayside will be wasted unless steps be taken to cultivate it by organised effort.

We therefore learn with pleasure that steps are to be taken to this end, and that a National Institute of Psychology and Physiology applied to commerce and industry is being established. The position proposed for the institute is somewhat similar to that held by the National Physical Laboratory in relation to physical science, and the Royal Society at a later date may be asked to assume ultimate control. Close coördination with the Fatigue Research Board is promised, and should be assured by the presence among the supporters of the Institute of several members of the Board. Indeed, it is no secret that the Institute owes its inception entirely to the activities of certain members of the Board, and particularly of Professor C. S. MYERS. The promoters of the Institute are now appealing to industry for financial support, and this ought to be readily forthcoming, for there exist here possibilities of incalculable value to employers and employed. The Institute, we learn, is not established for profit, but all funds are to be used to promote a more effective application of national energy, and a correspondingly higher standard of comfort and welfare for the worker. The medical profession, with vision for a healthy race, cannot fail to be keenly interested in this new venture. If successful in reducing only to some small extent the wear and tear of daily industrial toil, it will proportionately leave the resisting power against ill-health and disease stronger, lessen the proportion of deaths in the prime of life, and lighten the heavy burden of preventable invalidity. Although, and at first sight, the title, aims, and objects of the Institute seem to apply only to industrial affairs, properly conceived we have here a most practical venture in the realm of preventive medicine. To study the economics of the human machine; to fit individuals according to their capacity into occupations for which they are naturally adapted; and to recognise and deal with the first symptoms of disability before a diagnosable syndrome of disease appears—these things must be of incalculable value to industry and commerce, and, incidentally, they will lay down principles and establish standards applicable to every phase of life. Here we have preventive medicine as an economic asset in daily life brought boldly into the regions of industrial profit and loss.

The programme of the institute is so extensive as to make us wonder at the moderation of the promoters in only budgeting for an expenditure of £10,000 a year. The establishment of well-equipped laboratories is proposed to investigate motion study and rest pauses, mental and muscular fatigue, and selection of workers, and in them statistical research will be conducted. Training courses and lectures are to be provided; investigations undertaken in industrial establishments; the health, comfort, and welfare of workers are to be studied; propaganda work is to be set on foot. Clearly, all cannot be carried out at once. We note, therefore, with approbation, that at the outset special attention will be paid to devising tests of individual mental and physical ability, so that each person may be advised as to the occupation for which he is best fitted. Our present methods of choosing life's work are confessedly imperfect. A father compels a reluctant son to adopt the parental job; some passing boyish fancy or temporary friendship influences a lad to make a wrong start; local demands for labour decide the choice for many, and so the process of trial and error, of hit or miss, goes on. The result is seen in the migration of labour from factory to factory, from mine to mine, from ship to ship, a migration annually equal in numbers to the whole of the working population; a result in itself eloquent of discontent, and representing an appalling economic loss in efficiency and in happiness, that happiness which COMTE stated consists in doing the work for which we are naturally fitted. If the Institute only succeeds in this one matter it will abundantly justify its existence, and will do more to banish discontent and assure health—that health upon which human power depends—than any other social or economic activity. Searching for knowledge of man with one hand, and giving knowledge practical application with the other, the Institute might well choose BACON'S words for its motto, "Human knowledge and human power meet in one."

The Anæsthetist's Guerdon.

IT seems clear, from the correspondence recently published in our pages, that there is a good deal of dissatisfaction felt by anæsthetists at the present time, but the remedy is not equally obvious. It is natural, of course, that the anæsthetist should find it necessary to raise his fee in accordance with the raised cost of all the necessaries of life, and here his necessity is only the same as that of large numbers of practitioners who have in various quarters publicly announced a rise in their charges to meet the advanced cost of living. This does not, however, appear to be the whole or even the chief reason which has set anæsthetists considering the subject of their fees. They suffer under certain difficulties, which are peculiar to their branch of practice, and which tell financially against a form of practice which has never been highly lucrative. Never, indeed, nearly so lucrative as its peculiar risks and demands appear to us to justify it in being. Some of these obstacles are, as Dr. LLEWELYN POWELL pointed out, unavoidable, and the chief of these is the number of appointments which an anæsthetist is obliged to refuse owing to the choice of time for operation not resting with him. Consequently he is often already engaged for the hour at which his services are requested, and the case is lost to him. This is a contingency which affects no other kind of medical man to anything like the same extent. Even here, though, we would venture to point out that the remedy is partly in the anæsthetist's own hands. He may make himself so desirable that either the surgeon or the patient will change the time rather than lose the anæsthetist of his choice. And, in fact, this we know happens in a good number of instances.

There is another direction in which the anæsthetist is apt to suffer. This lies in the duplication, so to speak, of responsibility towards him. Sometimes the surgeon, sometimes the general practitioner, and sometimes the patient, is responsible for the anæsthetist's fee. Very often the anæsthetist does not know which of the three it is, and he may find himself equally neglected by all. Again, it often happens that he is not consulted about the subject of his fee, and he may be presented later with a sum that does not at all represent his own ideas in the matter. Obviously, the anæsthetist should have the opportunity of naming his own fee, unless he is working with men whom he knows to be fully acquainted with his usual practice. The practical difficulty here often is that the practitioner or the surgeon, arranging the matter with the patient beforehand, has to include the anæsthetist. If he does not know him, and has not, as may well be the case, the time to communicate with him, he may easily misrepresent to the patient the expectations of the anæsthetist. Yet even in this case error should not be very serious, for surgeons and practitioners are well aware of the general custom as regards anæsthetists' fees. That this custom has hitherto been too niggardly we are strongly of opinion. The day has gone by when the anæsthetist, if he be a man who has devoted himself specially to this work, should count merely as an assistant and be remunerated on some such scale. His duties and those of the assistant at the operation differ in essential particulars. The anæsthetist has much and the assistant little or no responsibility. He acts directly under the guidance of the surgeon, but the surgeon rightly expects the anæsthetist to conduct his part of the case on his own initiative and responsibility, and looks to him, as part of that responsibility, to preserve the patient's safety, and to warn the operator of any encroachment upon it. The anæsthetist is held wholly, or partly, responsible for "regrettable incidents" that may attend on or follow operations. His remuneration should, in justice, be commensurate with his anxious position.

In attempting to arrive at a general principle upon which to fix the anæsthetist's fees some correspondents suggest that these should bear definite proportion to the surgeon's fee. This would, no doubt, supply an easy guide, but there are many instances in which it would, we think, provide a false standard. An operation may be short and easy, yet the condition or the physique of the patient may render the administration of the anæsthetic as difficult as can be imagined. The surgeon might justly demand in such a case a small fee for a small operation. The anæsthetist would obviously be hardly treated if his fee fell in proportion. Only in one element—that of time—is it possible to assess the surgeon and the anæsthetist fairly together. Both are naturally to be paid more the longer their services are required. We have glanced at a few of the difficulties which will occur to anyone who has read our correspondents' letters. We do not attempt to offer a solution, for we are convinced that by conversations with one another and with surgeons, anæsthetists should themselves provide a remedy for defects in the arrangements under which they practise. A modern writer has observed that the calling of the anæsthetist is "an honourable but not a fertile one." We know that it will remain honourable, and we hope to see it become more fertile.

Pellagra and Diet.

EVEN the devastation of war may bring benefits to the human race. Among the solid advantages can be reckoned improved understanding of the biological values of foodstuffs. The part played by the building-stones of food, in the shape of proteins, carbohydrates, and fats, and the causation and avoidance of food-deficiency diseases have been studied with close attention and valuable results during and because of the war. The existence and importance of vitamines had, it is true, been demonstrated some 10 years before the war, and 10 years earlier still work on the etiology of beri-beri had prompted physiologists to study deficiency diseases. But the war has quickened all these studies, and pellagra is now receiving further and intensive scrutiny. Pellagra is an old and widespread scourge, obscure in origin, and long suspected of some relationship to underfeeding. Our military operations in Syria have brought to our notice large numbers of pellagrins amongst the prisoners. Given the material for study the British army has furnished many willing students. Few more exhaustive scientific investigations have been accomplished than those made by the Committee of Inquiry regarding the prevalence of pellagra among Turkish prisoners of war. The report of that Committee, summarised on p. 1027, contains definite negative and positive conclusions as to the causes of pellagra. The absence of proof of case-to-case infection or of location or local infection is of great moment. So, too, are the negative findings as to bacterial or protozoal infection. We come next to the positive conclusions. They are interesting, even if they bring us only to the threshold of new ideas and notable discoveries. Here is a disease in which it is suggested upon reasonable evidence that a prime factor is defective protein-supply to the body, and further, that protein-starvation may conceivably occur, even though an adequate quantity of protein is ingested. Admitting this to be possible, does pellagra depend on the quality of the protein, upon what is known as its "biological value," or does it depend on an inability of the individual to assimilate and turn to useful account protein of good biological value? The proteins have now been differentiated in regard to nutritive influence according to the amount and kind of amino-acid yielded on hydrolysis.

The report of the Committee propounds these questions, and leaves them for others to answer. Dr. A. D. BIGLAND, in his paper appearing last week in our columns on the Pellagra Outbreak among Ottoman Prisoners of War in Egypt, brings forward much first-hand information that cannot fail to advance our knowledge. There is undoubted value in his experiments, which corroborate those of previous observers who have failed to find any evidence of bacterial or protozoal infection either by cultural methods or by complement-fixation. Unfortunately, he was unable to complete his inoculation experiments or his investigation into the effect of maize of various qualities. He suggests that food-deficiency may predispose to, and some unknown toxin determine the occurrence of, pellagra. He points to the obvious similarities between this and Addison's disease, conjecturing that if a toxin is in some measure responsible it may act by attacking the endocrine glands, possibly the suprarenals. VISIWALINGAM,[1] observing that on the Malay peninsula pellagra attacked the Chinese only, came to a similar opinion, that faulty diet in itself could not cause pellagra, and that some superadded factor, probably a toxin, was required. BIGLAND notices as an arresting fact that the German army, apparently well enough fed, suffered from pellagra, whilst our army, fighting in the same country and under similar conditions, escaped.

Dr. J. I. ENRIGHT, however, in our present issue, deals more particularly with the outbreak of pellagra amongst German prisoners in Egypt. This author considers that the dietetic conditions under which these German pellagrins developed the disease "are sufficient to explode the food-deficiency theory as a predisposing factor." He advances the hypothesis that the parotid gland has some influence upon the development of pellagra. This may, indeed, be a hazardous guess, but the value of publishing these extensive personal observations cannot be gainsaid. The report of the Committee of Inquiry is a definite landmark in the survey of pellagra. Careful records of personal experience will help to carry us to the next stage. For the present all investigators will make the report their jumping-off ground. The connexion between dietetic deficiency and endocrine activity, which pellagra, famine-dropsy, and other deficiency diseases suggest, seems on the verge of conclusive proof by MCCARRISON'S experiments.[2] ENRIGHT, although he rejects the theory of suprarenal inadequacy as an explanation of pellagra and regards the food-deficiency theory as exploded, none the less expects to find the cause of the disease in a disorder of internal secretion, which interferes with protein metabolism in some such way as pancreatic insufficiency disturbs carbohydrate metabolism. Perhaps the link which will unite these divergent views is to be forged out of the hypothesis which makes an adequate supply of tryptophane essential to the secretion of adrenalin.

[1] Journ. of Trop. Med. and Hyg., 1920, xxiii., 46.
[2] The Effect of Deficient Dietaries on Monkeys, Brit. Med. Jour., 1920, i., 249.

Annotations.

"Ne quid nimis."

THE POPULARISATION OF HEALTH QUESTIONS.

DURING this week a widely organised campaign of enlightenment on all questions of health has been undertaken by the Royal Sanitary Institute. Unquestionably the public is far more widely interested in health questions than was the case even a decade ago, while at the close of the nineteenth century health questions meant to the majority of the public nothing more than calling for a doctor or going to a hospital. We are witnessing to-day a great change of spirit; and if ever a new Government Department had an opportunity of public appreciation for the services embarked upon, it is the Ministry of Health. The public now knows that in the improvement of health conditions lies the solution of some of our most anxious questions of statesmanship and legislation. The institution of "Health Week" should certainly increase the driving force of all whose business it is to conduct public health matters and supervise medical and nursing administration. The publication by the Ministry of Health of a pamphlet[1] directing public opinion to the salient points of preventive medicine is therefore particularly timely. In this pamphlet the Chief Medical Officer of the Ministry sets out with clearness the need of an educated community, if the great work now before the Ministry is to obtain intelligent attention; and he specifies the directions in which an enlightened public opinion can help the individual and the State. The simple principles by which disease, personal and epidemic, can be avoided are detailed, so that the community should be enabled to assent to sanitary reform and government with open eyes, not grudgingly nor of necessity, but in obedience to reason.

THE AMERICAN HOSPITAL IN LONDON.

PROGRESS has recently been made, both in England and the United States, with the organisation of the American Hospital for London. Ex-President Taft has accepted the presidency in the United States, while Lord Reading, who from the first has taken an interest in the success of the hospital, has accepted a similar position in this country, with Lord Bryce as vice-president. The plans have been considered by an influential committee of American citizens resident in London, and steps are being taken to incorporate the institution according to the laws of the State of New York, when a campaign will be opened to raise a large endowment fund. At present a big building scheme is not feasible, but it is hoped to open a temporary building for the accommodation of patients early in the coming autumn. The scheme for the American Hospital, following on that conceived by Mr. Philip Franklin less than a year ago, is broad in scope. The resolution founding the hospital laid down that one of its most important aims was "to act as a link in binding together the two nations for the advancement of medical science as affecting the welfare of humanity." Actually, and in practice, the hospital is intended to become the principal research centre in Europe for American medical graduates who wish to proceed with their studies. For many years past American graduates who desired to continue their medical education in Europe settled almost as a matter of course in Berlin or Vienna, where special opportunities were freely placed at their command by the German and Austrian authorities. Since 1914 conditions have changed, and the leading members of the American colony in London have determined that American graduates who come to Europe shall find in London the facilities they were formerly offered on the continent. This decision has received the unqualified support of many leaders of the British medical profession, and the medical committee in Great Britain includes Sir Arbuthnot Lane, Sir Humphry Rolleston, Sir John Bland-Sutton, Sir John MacAlister, and Mr. Philip Franklin, whilst the similar committee in the United States consists of such well-known physicians and surgeons as Dr. George W. Crile (nominated by the American Academy of Science on International Relations), Dr. W. J. Mayo and Dr. Charles H. Mayo, of Rochester; Dr. A. H. Ochsner, of Chicago; Dr. Rudolph Matas, of New Orleans; and Dr. Franklin Martin, of Chicago.

The organisation of the American Hospital is thus becoming of considerable international value, whilst in science it presents possibilities which have scarcely yet been fully realised. Nor is the social side being disregarded. In July the authorities of the hospital will entertain at dinner one of its American colleagues, Dr. Charles Mayo, whose surgical clinic at Rochester, Minn., is known wherever medical men congregate together.

THE STERILISATION OF MILK BY ELECTRICITY.

IN THE LANCET of May 9th, 1914, we reported the findings of some interesting investigations carried out in the Thompson Yates laboratories in connexion with the possibility of sterilising milk by electrical treatment. The work was undertaken by the professor of bacteriology in the University of Liverpool, Dr. J. Martin Beattie, and the results were of a promising character. A further quest, interrupted by the great crisis, has since been made and the Medical Research Committee has issued this week a report[1] by Professor Beattie, which presents the practical details of the method so far as recent work has developed. At the outset it was decided to refer the question to Professor R. F. C. Leith, of Birmingham University, with the result that he was able to confirm Professor Beattie's claim for the efficiency of the electrical method in sterilising infected milk. The conclusion now is that milk can be rendered free from *B. coli* and *B. tuberculosis* by the electrical method described, without raising the temperature higher than 63° or 64° C. The temperature effect is very short in duration, and in itself is not the principal factor in the destruction of the bacteria. It is stated that though the milk is not sterilised in the strict sense of the word, yet the percentage reduction of the bacteria, taken over a period of a fortnight, is 99·93. The keeping power of the milk appears to be increased, the taste is not altered, and, so far as careful chemical examination can determine, the properties not impaired. Finally, it is definitely stated that the milk so treated can be described accurately as raw milk

[1] Public Opinion in Preventive Medicine (the Lady Priestley Memorial Lecture), by Sir George Newman, K.C.B., Chief Medical Officer, Ministry of Health. London: His Majesty's Stationery Office. 4*d*. net.

[1] Special Report Series, No. 49. Published by His Majesty's Stationery Office.

free from pathogenetic bacteria. No very extensive work has been done nor safe conclusions deduced as to the biological value of the milk so treated, but so far babies fed on this milk are reported to have done "extremely well." The bactericidal effects are attributed not to the direct action of the current, as such, upon the bacilli, but to the heat generated in its passage, suggesting a thermal method of destruction. The opinion is expressed that in the electrical method the current raises the temperature of the milk more quickly than occurs in simple heat-sterilising, and since this current passes through every part of the milk the heat which it generates reaches the whole of the fluid at the same moment. We note that the electrodes used are made of copper, and it is known that traces of this metal serve a bactericidal purpose, but in the report it is stated that no trace of any copper or other metal could be found. The Medical Research Committee concludes that this work has presented us with "an elegant and practical method of purifying milk for human consumption, of which the use upon a large scale becomes now a problem for closer financial and administrative examination." The economic aspect of the question is not referred to in the report, but, if this should raise no difficulty, it will remain to ensure that the adoption of the method leads to no discouragement of clean methods in the byre and dairy.

BREATH-HOLDING AS A CRITERION OF CARDIAC EFFICIENCY.

IT is nearly two centuries since Valsalva's classic experiment in 1740 showed the marked and easily recognisable effect of sustained forced expiration on the pulse-beat, and therefore on cardiac efficiency, when the respiratory passages are forcibly closed. A hundred years later, in 1838, Johannes Müller, of Berlin, added the complementary experiment of the effects on the pulse of forced inspiration under similar conditions. These two experiments have become classic, and suffice to demonstrate the intimate relationship between respiratory movements and cardiac efficiency, which has since been studied in many bearings. A direct practical application of the value of these facts was set forth in our issue of last week (p. 976) in dealing with the testing of the fitness of would-be airmen for their trying avocation. The tests are relatively simple, easily applied, and enable the physician to ascertain the condition of the lungs, to measure—by a mercury manometer—the force of the expiratory muscular mechanism, and the pulse response under varied respiratory conditions. The breath-holding test enables the physician to obtain a fair idea as to the stability of the central respiratory nervous apparatus of the examinee. A stop-watch and a nose-clip are all the apparatus required, while the precise instructions as to carrying out the experiment are equally simple. The time the man can hold his breath before the inevitable and forceful sensation of the need to breathe compels him to give way is noted. The average time in the normal fit pilot is 69 seconds, the minimum being 45 seconds. Nearly all cases with a time record as short as this were rejected on medical grounds apart from this test. Not the least interesting part of the test as applied to airmen is the reply given when the examinee is asked what caused him to give way and breathe in, the normal response being, "I had to give up," or "I wanted to breathe." Under conditions that point to unfitness for pilotage the reply may be, "I felt giddy" or "dizzy" or "squeamish" or "flushed," responses which indicate that other nerve centres are involved besides the true bulbar respiratory centre. Such extraneous sensations, so markedly different in character from the pure inspiratory impulses, enable the observer to form conclusions, not only as to the stability of the respiratory centre itself, but indirectly of those other parts of the central nervous system whose stability plays an important part in the nervous outfit of the aeronaut. The combination of minimum time record and abnormal verbal response points to the examinee being one likely to suffer from oxygen hunger at high altitudes, and possibly to an inherent inability, by a strong effort of will, to carry on under conditions of stress. The breath-holding test may have a similar application in other branches of medical practice. It was effectively used by Dr. H. F. Marris in an attempt to estimate the factors in the production of tachycardia occurring in febrile illness, printed with a series of admirable charts in our columns on May 11th, 1918. The general practitioner might add it to his armamentarium.

CONTUSION OF THE PELVIS A CAUSE OF RETENTION OF URINE IN CASES OF ENLARGED PROSTATE.

IN the *Gazette Hebdomadaire des Sciences Médicales de Bordeaux* M. E. Loumeau has called attention to a cause of retention of urine in cases of enlarged prostate which does not seem to have been previously recognised—contusion of the pelvis. It is generally said that the onset of acute retention, the attack of prostatic congestion, as Legueu terms it, is usually due to exposure to cold, undue postponement of the need to micturate, change of regimen (excess of alcohol, diuretics, spices, &c.), sexual excitement, constipation, an attack of piles, shocks to the perineum from the vibrations of railway trains or badly sprung vehicles, or immoderate horse or bicycle exercise. But M. Loumeau has found that a sudden contusion of the perineum, whether directly by a fall on the buttocks, sacrum, or coccyx, or indirectly by a fall on the feet may bring about the same result. In his practice as a genito-urinary surgeon he has met with 15 such cases. The following are examples:—

A man, aged 51 years, who suffered from frequency of micturition at night, fell on his coccyx. Retention of urine followed, but disappeared after single use of the catheter. Seven years later, after a railway journey, he had another attack of retention, for which catheterism was very difficult. He was cured by prostatectomy.

In a second case a man, aged 63 years, had suffered for a long time from frequency of micturition by day and night. He was struck by the shaft of a cart and thrown, falling on the posterior surface of his pelvis. Complete retention of urine followed and lasted for four weeks, during which he was catheterised several times a day.

In a third case a man, aged 67 years, who had never had any urinary trouble, was knocked down by an automobile, which struck him on the chest and threw him violently on the posterior surface of the pelvis. Several ribs were broken. Complete retention of urine with incessant attempts at micturition followed. After prolonged effort clear urine was passed involuntarily drop by drop almost continuously, and there was intolerable pain in the lower abdomen. Bronchitis, œdema of the face and legs, and a generally miserable condition ensued. He was treated in hospital only for the

fractured ribs, and was not seen by M. Loumeau until nearly three months after the accident. There was a greatly enlarged prostate with incomplete aseptic retention of urine and micturition by overflow. The bladder could be emptied only by a greatly curved metal catheter because of the prostatic obstruction. Suprapubic cystotomy was performed and showed enormous dilatation of the bladder. In consequence of the general condition of the patient prostatectomy was not performed until a week later. He was then completely cured.

In such cases the retention is evidently due to acute congestion of an already adenomatous prostate brought about by the injury. This retention may be the first symptom of old hypertrophy of the prostate, until then "silent" and unsuspected. The complication of contusion of the pelvis is of medico-legal importance, as it is a responsibility of the author of the accident.

MEDICAL REMEDIES: SAFEGUARDS FOR DOCTORS AND PUBLIC.

THE Ministry of Health calls attention, under this heading, to the misunderstandings which have arisen as to the objects and scope of the Committee recently appointed by Dr. Addison to consider measures for the effective control of certain therapeutic substances. The official statement is as follows:—

The terms of reference do not include and have no relation whatever with the subject of patent or proprietary medicines (as those terms are popularly understood), nor is the work of the new Committee in any sense a reduplication of the work of the Select Committee on Patent Medicines appointed in 1912.

The "therapeutic substances" now under consideration are recognised remedial substances, the purity and standard of efficacy of which cannot be adequately ascertained by the employment of ordinary chemical tests as can that of the great majority of medicinal substances. This determination can only be done in the substances under consideration in properly equipped laboratories by the employment of biological or physiological methods. The substances in question may be divided into two great classes: (1) bodies such as serums and vaccines, of which a well-known example is the antitoxin given in cases of diphtheria; (2) mineral and vegetable bodies of another kind, the most familiar examples of which are salvarsan, the well-known remedy for syphilis, and digitalis, a remedy in certain forms of heart disease.

At present there is not in this country, as there is in some others, any effective supervision and control of the manufacture or standardisation of many of the important agents mentioned above. The work of the Committee is, among other things, to devise measures to coördinate and control the various tests and standards employed by firms and persons engaged in the preparation and sale of these substances, and to devise a uniform system of standardisation and control the better to guarantee that these agents are what they purport to be and are of an accepted standard of efficacy.

In a few cases, however—e.g., salvarsan—a body of the nature defined above may be the subject of a patent. It is only in such exceptional products, which are usually of foreign origin, that the question of patent medicines will arise at all, and even these bodies have nothing whatever in common with the ordinary run of patent and proprietary medicines with which the public is familiar.

In our issue of May 1st we informed our readers correctly as to the objects of the new Committee. The careless interpretation put upon these objects by some of the lay, and even some of the medical, papers has caused considerable misunderstanding.

In this connexion it is interesting to refer to a paper published in the April number of the *Journal of the Chemical Society*, just issued, in which it is shown that the composition of salvarsan is variable. This statement is significant since obviously any departure from a normal structure may well disturb therapeutical expectancy. The authors, Robert George Fargher and Frank Lee Pyman, state that when salvarsan was first introduced into general use the makers, a well-known German firm, claimed that salvarsan as made by them contained about 34 per cent. of arsenic. In 1911, however, it was reported by a writer in the *Apoth. Zeit.* that the substance lost 7·6 per cent. of its weight on heating and contained only 31·2 or 31·8 per cent. of arsenic. These results were communicated to Ehrlich, and later the makers issued a corrected statement in a circular to the effect that "the arsenic content of the preparation corresponds to the formula—$C_{12}H_{12}O_2N_2As_2 2HCl 2H_2O$" (= 31·6 per cent. As). Later Ehrlich and Bertheim put forward the view that the final substance contained a methyl group, and Kober claimed the absence of $2H_2O$, and expressed the opinion that the combined solvent in salvarsan, precipitated from methyl alcohol by means of ether, is methyl alcohol. On seemingly good grounds Fargher and Pyman show that this view is erroneous, though they note that when salvarsan is precipitated from methyl alcohol solution, by means of acetone instead of ether, the product contains a molecular proportion of acetone in more or less stable combination. They point out also the presence of a considerable proportion of sulphur in commercial salvarsan, which was not disclosed in the reputed formula. The authors consider that the sulphur occurs, at least in part, in the form of the sulphamo group. A series of analytical figures shows distinct variations in sulphur, chlorine, and other contents in ten preparations examined. The authors describe a process for isolating a pure product. The call for standardisation is obviously clear.

THE SURGICAL TREATMENT OF PROLAPSE OF THE UTERUS AND VAGINA.

Dr. Blair Bell's lecture on this subject, delivered last Wednesday before the Royal Society of Medicine and published in this issue of THE LANCET, deserves the careful study of gynæcological surgeons. The after-results of his operations (99 per cent. of cures in 4000 cases) are so good that we welcome his contribution to the subject. He rightly emphasises that "no one procedure is suitable or satisfactory for every type of case." Cases of prolapse of the uterus and vagina are divided into two main groups by the writer, and the surgical treatment adopted differs in the two groups. The first group consists of cases of prolapse during the reproductive period, and the author at the outset condemns the operation of ventrifixation, and considers ventro-suspension useless. He advises repair of the vagina and perineum, amputation or repair of the cervix, if necessary, and his modification of Gilliam's operation to suspend the uterus. In bad cases more is required, and Dr. Blair Bell commends reconstruction of the peritoneal aspect of the posterior segment of the pelvic floor. By this method the pouch of Douglas is obliterated, with the result that this part of the pelvic floor is greatly strengthened. The second group of cases consists of those occurring at or after the menopause, and for these he favours the interposition operation, together with properly performed vaginal repair, although if there is no descent of the uterus the latter alone

will suffice. Dr. Blair Bell attributes failure of the interposition operation to sepsis, and his experience of this operation has been far happier than that of most operators. It is evident that this operation will have to be reconsidered in the treatment of prolapse, and we have no doubt that considerable discussion will arise upon its merits in uterine prolapse. The principles enunciated with regard to vaginal repair are now well established, and most operators of experience will agree with them. Dr. Blair Bell rightly lays great stress on the preparation and after-treatment of his cases, and we agree that skilful nursing is essential for the ultimate success of the operation.

THE TRAINING OF BLIND STUDENTS.

AN important memorandum has been issued by the Board of Education, who consider that the time has now come when some further endeavour should be made to secure provision of better and more extended facilities for students formerly in attendance at special schools, and in especial for training blind students. With this end in view, they have decided to modify and substantially to increase their grants in aid to training institutions. The primary object is to provide an essential link between the special school which provides primary education up till the age of 16 and the workshop; but provision is also to be made for the needs of blind persons who, owing to the age at which they became blind or other circumstances, have not attended a special school, but who are capable of benefiting by attendance at a course of training. In determining the trades for which instruction and training can best be provided, the Board advise that careful consideration be given to probable openings for employment, either in the field of professional employment or in the open markets of industry and commerce, locally or otherwise, or in special workshops, or in home industries. To meet the needs of these students they recognise that a large proportion of them can only be provided for in residential institutions, and by offering largely to increase the grants it is hoped to enlist the more active coöperation of local education authorities. The new regulations in the first place provide for the payment to a local education authority of a grant of one-half of the net expenditure on: (*a*) approved courses at recognised institutions provided by the authority, and (*b*) payment of fees of students attending approved courses at a recognised institution not provided by the authority. Secondly, it has been decided to continue to pay grants direct to an institution not provided by an authority in respect of students for whom no fee has been paid by an authority, and to increase these grants to a maximum of £8 10*s*. a year, with an additional £8 a year for any student who is resident in the institution. These grants will be retrospective so far as the financial year commencing April 1st, 1919, is concerned.

VISIBLE GROWTH.

GARDENERS and reformers have this in common that they would both like to see their work grow beneath their eyes. Hitherto they have had to rest content with inferring growth from the fact that the objects of their care appear longer or broader after an interval of days or weeks. Even the gourd, which grows up in a night, shows no change to the most watchful eye. Under the microscope some of the lower forms of life may seem almost to grow, the pullulation of yeast cells being a familiar example. It is, of course, only a question of magnification and accuracy of perception. Continuous growth is there, if we were only able to perceive it. To Sir Jagadis Bose we owe the demonstration of the growth in the higher forms of vegetable life within a period of minutes. His crescograph, brought to perfection after years of painstaking study in the Research Institute which he founded at Calcutta, exaggerates the motion of the growing tip of the vegetable shoot a million times or more, rendering it plainly visible to a roomful of ordinary people possessed of no special powers of observation. Obviously accidental movement, due to warmth or other physical factors, similarly exaggerated by enormous magnification, has to be reckoned with. But Sir J. C. Bose was able a few days ago to satisfy six London professors of exact sciences of the actuality of the growth by means of apparatus set up in the physiological laboratory of University College, London. Each step in the process of growth became visible. The inventor has used his instrument himself to show the stimulating effect of sunshine and the depressing effect of ether on vegetable growth. Thus a physical reagent has been found for the presence of life in a body, and the vividness of that life under various experimental conditions can now be assessed in terms of linear measurement. The discovery may enable us to get nearer to the knowledge, which we so ardently desire, of the nature of life itself.

ROYAL ACADEMY EXHIBITION.

THE 152nd exhibition of the Royal Academy appears to have received from critical pens a favourable endorsement. Speaking only for a limited section of the public we are not surprised. The exhibition marks, in our opinion, real progress, not so much in technique—concerning which we have no qualification to speak—as in the qualities which so many of the pictures possess. Numerous as the exhibits are it is an open secret that they are the result of arduous selection among many competing canvases. If there are a good many efforts on the walls which might have well remained outside the show, many of these only fail because other examples are better, and there is a far lower percentage of the quite commonplace picture deliberately painted to meet what is supposed to be public demand. The fact is that public taste has been considerably educated of late, and it is possible that the general upheaval of social circumstances produced by the war has compelled a large number of people, for the first time in their lives, to look at the world in which they live, and thus to see things as they are and not as they think they should be. This is undoubtedly exactly what has happened with therapeutics, and it is natural that it should occur also in the world of art. There are few paintings of particular medical interest, and we do not observe any story pictures depending for their appeal upon what the artist considers to be the pathetic or dramatic side of medical work. We welcome with emphasis the disappearance of this kind of picture. Of well-known artists, Mr. Sargent is a notable absentee. Sir William Orpen, Sir John Lavery, and Mr. Clausen lend particular distinction to a very satisfactory exhibition. To Sir William Orpen's beautiful and dignified presentation portrait of Sir Clifford

Allbutt we referred last week. It hangs in the first gallery, and is certainly one of the pictures of the year.

COUNCIL OF BRITISH OPHTHALMOLOGISTS: A RETROSPECT OF TWO YEARS' WORK.

THE Council of British Ophthalmologists was founded at a meeting held at the Royal Society of Medicine on May 2nd, 1918. It owed its inception to the need for some body which could act rapidly and authoritatively in regard to questions of ophthalmological interest arising in connexion with national industries or public services. In the past such questions had usually been referred, often in a haphazard manner, to individual ophthalmic surgeons, who could express only their own opinions. Fortunately, many of those to whom application was made were well fitted to give advice, but a consensus of feeling arose that such advice would be of more value if given after the subject had been considered by a council representative of the general body of British ophthalmic surgeons.

During its two years of work the Council has found ample justification for its existence, as is sufficiently shown in the report presented at a meeting of British ophthalmic surgeons held at the Royal Society of Medicine on April 30th. Four communications have been published, dealing with (1) Standard Illumination of Tests of Visual Acuity; (2) The Need for Improved Training of Medical Students in Ophthalmology; (3) The Need for a Higher Qualification in Ophthalmology; (4) Vision of Men Engaged in Motor Road Transport. In regard to the second the report expresses regret that the General Medical Council has not yet taken effective action to remedy the deficiency. The third has already exerted a valuable influence. The Council has had the satisfaction of seeing the general conclusions reached in regard to the vision of motor drivers adopted by the police authorities in London and elsewhere, and finding acceptance with the leaders of the men concerned. These published communications represent only a part of the work of the Council. Four members were nominated to serve on a London County Council committee dealing with the lighting of cinemas and eye-strain. Committees are considering the standardisation of test types, the notation of cylinder axes, and the question of sight-testing by opticians. Two representatives are serving on the Advisory Committee on Technical Optics. The report closes with the brief remark that the expenses of the Council have been defrayed by its members.

POST-GRADUATE STUDIES IN BRISTOL.—The Director of Post-graduate Studies in the University of Bristol announces a course of demonstrations for Wednesday afternoons during May and June alternately at the Royal Infirmary and General Hospital. The subjects are as follows: May 12th, Medical Cases; May 19th, Atonic Dilatation of the Stomach, by Professor P. H. Edgeworth; May 26th, the Causes of Indigestion, by Dr. Carey Coombs; June 2nd, Recent Physiology and Surgical Pathology of the Stomach, by Mr. Rendle Short; June 9th, Surgery of Gastric Ulcer and Pain, by Mr. T. Carwardine; June 16th, Cutaneous Reactions in Asthma, Urticaria, and Idiopathic Vomiting, by Dr. J. A. Nixon; June 23rd, Treatment of Simple Fractures by Extension Appliances, by Mr. Hey Groves; June 30th, Surgical Cases. A fee of 2 guineas covers this course, as well as one month's attendance at any or all of the clinical departments of the University. Opportunities of daily study are also afforded to clinical assistants, who, in addition to work in particular departments, are made free of laboratories, library, and so on, at a rate of 3 guineas per month. All inquiries should be addressed to the Director of Post-graduate Studies (Clinical Section), Pathological Department, University of Bristol.

KING EDWARD'S HOSPITAL FUND FOR LONDON.

IN order that the hospitals of London may immediately benefit by the funds collected under the auspices of King Edward's Hospital Fund for London a preliminary meeting is held at the end of the year, when the report of the Distribution Committee is announced and the awards allocated. An account of the last meeting was published in THE LANCET for Jan. 3rd (p. 50). The annual meeting was held at St. James's Palace on April 30th, when the Earl of Donoughmore presided. At the commencement of the proceedings a resolution of regret was carried in silence on the announcement of the death of Sir Henry Burdett, who, in many ways, was, as Lord Somerleyton pointed out, the originator of the idea of the Fund. In presenting the account of receipts and expenditure for the year ending Dec. 31st, 1919, Lord Revelstoke, the honorary treasurer, reminded the Council that in order to meet the cost of renewals and repairs of hospitals, deferred owing to the war, it was estimated that £50,000 would have to be drawn from reserves, but this had proved an over-estimate by £4000. The motion, on the proposal of Lord Donoughmore, seconded by Sir T. Vesey Strong, was carried unanimously. Sir Frederick M. Fry, honorary secretary, submitted the draft report of the Council, which showed that the total receipts for the year 1919 were £201,477 0*s.* 9*d.*, of which £8422 2*s.* 2*d.* were contributions to capital, and £193,054 18*s.* 7*d.* receipts on general account.

The General Fund receipts were made up as follow: Annual subscriptions, £25,199 13*s.* 2*d.*; donations, £7143 7*s.* 3*d.*; League of Mercy, £17,000; legacies, £21,976 2*s.* 8*d.*; dividends and interest from investments, £116,535 15*s.* 6*d.*; trustees of the Bawden Fund, £200; estate of Samuel Lewis, deceased, £5000, making a total of £193,054 18*s.* 7*d.*

During the year the amount spent on the administration of the Fund was £4085 17*s.* 9*d.*, or £2 0*s.* 6*d.* per £100 of the total received, as compared with £3672 19*s.* 2*d.*, or £1 13*s.* 7*d.* per £100 in the previous year. The average yearly outlay in this respect for the whole period since the inauguration of the Fund has been £2954, the corresponding percentage of the receipts being £1 5*s.* 5*d.*, or less than 3½*d.* in every £1 received.

The question of hospital extensions has for some time been engaging the special attention of the Distribution Committee. By the end of 1917 schemes had been notified which, if they were all carried out, would have the effect of adding 1750 to the number of beds available in 1913. By the end of 1918 the number of additional beds provided and contemplated amounted to about 4000, of which about 1000 had already been opened since 1913, and the Distribution Committee had begun a detailed examination of all these schemes, partly in connexion with the pending special distribution of surplus Red Cross funds, and partly for the general purpose of securing that no scheme should be undertaken without due regard to financial practicability, and to the general effect of all the schemes taken together.

The Council are under great obligations to the newspaper press for the assistance they have rendered in the past, and continue to rely upon their kindly coöperation in obtaining for the Fund wider publicity and support. Their help is more than ever valuable at a time like the present, when hospital expenditure has enormously increased, when the subscribing power of many regular contributors has diminished, and when, therefore, it becomes more and more important that the special value of the work of the voluntary hospitals, and their claims to increased support, should be brought home to a wider public.

In moving the adoption of the report, Lord Donough more referred to an estimate recently issued by the honorary secretaries of the Fund in which it was shown that the total expenditure of the London hospitals in 1919, taken together, amounted to £2,100,000. Towards this their income, including the grants from the three central funds, amounted to about £1,900,000, leaving a deficit on the year's working of £200,000, or approximately 10 per cent. The annual deficit of the London hospitals at the time of the inauguration of the King's Fund in 1897 was about £70,000, which, by a coincidence, was also about 10 per cent. of the expenditure. Although during these 23 years the hospitals had been able to pay their way, the income increasing with the expenditure, it was not wise to be too optimistic of the future. The present difficulties of hospitals were not the result of any failure on their part, but arose solely from the general financial effects of the war. The motion was seconded by Mr. Norman, Governor of the Bank of England, and carried. A vote of thanks to Lord Donoughmore terminated the proceedings.

HOUSING NOTES.

Housing Bonds Campaign.

THE campaign for raising local funds to support the housing schemes already in progress was inaugurated at the Guildhall on May 3rd. In the absence of the Prime Minister, which was due to sickness, Mr. Bonar Law appealed to a large audience of city men and delegates from local authorities. He pointed out that while in matters of social reform the country must have regard to the capital at its disposal, the credit of the country was itself dependent upon the stability of industrial conditions; a sullen and angry populace might be fatal to the industry and credit of the country. The same point was made in a letter from the Prime Minister, who wrote that "adequate housing would ensure happy homes, which are the surest guarantee any country can provide against agitation and unrest."

Mr. Law touched on the impossibility of securing such homes under present conditions, and said that the attempt to stamp out tuberculosis was hopeless while overcrowding persisted. The five years' arrears of housing would not be made up without an exceptional effort. This effort was being put forward by the Government. On upwards of 30,000 houses work was actually in progress, and a stage had now been reached when the programme was in danger of interruption for want of financial guarantees. Every class of the community should assist, since every class was interested. He appealed in particular to employers of labour and to the churches. Many industries, though they needed more men, were unable to absorb those who were out of work because no houses could be found for them to live in. Religious bodies must realise that the moral and spiritual well-being of the people was bound up with housing conditions.

Dr. Addison, in proposing a vote of thanks to Mr. Law, announced that 40,000 to 50,000 houses were held up because local authorities hesitated to sign contracts. The contracts now prepared were sufficient, he said, to employ nearly the whole of the building trade. To an interrupter, who wished the State to furnish all the necessary funds, Dr. Addison retorted that each locality had its own problems and responsibilities. The State could only get money from its citizens, and the people of each locality must be moved by a sense of duty to those amongst them who had fought in the war and now are homeless.

Mr. Walter Leaf, the President of the Institute of Bankers, seconded the vote of thanks and promised the bankers' support in the campaign.

Though none of the speakers made any definite appeal to the profession, medical interest in the health of the community will certainly promote earnest endeavour.

Standards of House Construction.

While so many new houses are being put up it is important that a reasonable standard of construction shall not be sacrificed to the urgency of the moment. An official of the Ministry of Health, who resigned recently, gave as one of the principal reasons for his resignation his opinion that the standards laid down in the Housing Manual are not being maintained in practice. Dr. Ira S. Wile raised some interesting points in this connexion in a paper read last autumn to the Sociological Section of the American Public Health Association.[1] In one city (Johnstown, Pa.) the infant mortality-rate in homes with bath-tubs was 72·6 and without 164·8. The effect of overcrowding both on infant mortality and on various contagious diseases is also discussed in this paper. Among the methods advocated by Dr. Wile for raising the standard of house construction are: "the education of the public as to the natural value and importance of sanitary dwellings; ..... the promulgation of minimum standards of housing construction, and particularly the regulation of standards of maintenance and repair; ..... the support by health departments of those measures tending to increase family incomes, so as to bring about a minimum standard of living wage." Lord Astor, speaking recently to a Conference of the National Council of Public Morals, said that unless we swept away slums, slums would sweep away the existing order of society, from which it may be gathered that the official view of housing standards is certainly above the practice of East London, whatever may be said of the new houses in the north.

The Limit in Overcrowding.

Reports from all parts of the country confirm the impression that the population is becoming more crowded and harassed for want of houses as the months of peace are multiplied. At Yeovil the relieving officer told his board of guardians on April 16th that there was a family living in a farm out-house. They had been ejected from their home. At Shoreditch the coroner was properly shocked to hear of a man sleeping in one bed with two of his daughters, one of them 19 years old; but it appeared that the family of five lived in a two-room tenement and slept in one room containing two beds. As the mother and one child were seriously ill with influenza the conventions could hardly be respected. Under such conditions, if one member of the family catches any infectious disease it is almost inevitable that all should suffer and no one be left to nurse the sick.

The Need for Public Interest.

In face of such stories as these, the difficulties still to be overcome by the Ministry of Health are almost incredible. The shortage of labour remains a most serious obstruction, and though the least wealthy are certainly the worst sufferers through the present state of affairs, it seems impossible to move the building unions to admit "diluted" labour. So serious is the result that it becomes a duty incumbent upon every public-minded citizen to support the local authorities in his own neighbourhood and to put his private purse no less than the stimulation of his personal interest at the service of whatever schemes may be in hand. It may be well to remind those who find little sympathy with public schemes that the Government bonus is payable to all who build houses through private enterprise so long as these houses are completed by Dec. 23rd, 1920. The plans have to be approved by the local authority. The General Housing Memorandum No. 25, issued by the Ministry of Health in March, gives full particulars, while a White Paper[2] issued in the same month gives the specifications required by the Ministry for wooden houses. This is of interest in view of the short time allowed for completion of the building. The bonus on the first two completed houses has already been paid.

Housing Reform in South Africa.

In South Africa the disgraceful condition of the poorer dwellings in many of the large towns was brought to light by the severe influenza epidemic of 1918–19. Hottentots, Kaffirs, and Whites too, were found living in insanitary, ill-ventilated, and badly overcrowded dwellings. The shortage of houses made immediate reform the more difficult to accomplish, but although the South African Government has so far taken no steps, many municipalities have undertaken local housing schemes, and others are discussing the advisability of so doing. Bloemfontein is generally considered to be the model city in this respect. Here the municipality have built a quarter of ideal workmen's cottages and insist that the workers shall be able to keep the cottages in good order and to pay an "economic rent." To this end every worker must earn at least 7*s.* 6*d.* daily. If his trade cannot pay him at this rate he is allowed an allotment for cultivation in his spare time, so that the deficiency in his regular wages may be made up. Here is an object lesson which some of our own local authorities might do well to study.

[1] American Journal of Public Health, April, 1920, p. 327.

[2] Standard Specification for Cottages of Timber Construction. His Majesty's Stationery Office. 1920. 3*d.*

THE MEDICAL EXAMINATION OF THE CIVILIAN AERONAUT.[1]

(Concluded from p. 976.)

THE methods employed in the medical examination of civilian pilots, navigators, and engineers were set out briefly, though substantially in the words of the official publication, in these columns last week, but only the general medical and surgical standards required were commented upon. It is, of course, essential that the candidate, when his general health conditions have been found to fit him for his occupation, should also be in full possession of his special faculties of seeing, hearing, and that the vestibular apparatus, the nose, throat, and buccal cavity, should be normally formed and fit to discharge their physiological functions.

As the Report points out, the importance of a reasonable degree of visual acuity is obvious, but ability to judge distances is an even greater necessity. Normal refraction and a healthy condition of retina and intrinsic muscles is required for the first, while for the second it is necessary that the aeronaut should possess good binocular vision and normal balance of the extrinsic muscles. The scheme of the medical examination is set out as follows:—

Eye Examination.

Both intrinsic and extrinsic muscles are liable to a lack of tone or over-action. Occurring with intrinsic muscles, visual acuity is directly affected. With intrinsic muscles lack of tone and over-action are not only liable to affect visual acuity, but also tend to give conflicting, delayed, or wrong interpretation of messages sent from the eye to the brain, and the ensuing reactions will, in consequence, tend to be delayed or even at fault. When, therefore, these conditions exist danger to life and material is obvious, and one of the most important aims of the eye examination should be their early recognition.

Examination of the muscular balance and its defects is extremely difficult, and full of pitfalls; it must be remembered that fusion faculty is largely dependent on physical health and that any slight fault may be exaggerated by entirely temporary causes such as fatigue, illness or recent application at close work, especially if there has been acquired a habit of suppression or neglect of one or other eye.

The Royal Air Force are at present only admitting candidates with an unaided visual acuity equivalent to 6/6 in both eyes. Provided that heterophoria is absent, or only present to a slight degree, in certain specially suitable cases this visual standard may be slightly relaxed for civilian aviators. It is, however, not advisable to allow the standard (even in special cases) to be below 6/9 and 6/12, correctable to 6/6 with glasses.

Cover test for muscular defect.—Ask the patient to fix a pencil in a similar manner, and with the other hand cover one eye with a card and then uncover; watch whether the eye moves on uncovering. Repeat the test for the other eye in a similar manner. A perfectly balanced pair of eyes will remain fixed on the pencil whether one is covered or not, whereas movement inwards or outwards on uncovering shows lack of balance under convergence.

It is evident that the medical man conducting an eye examination of this quality must be considerably familiar with his subject, as the tests are of a high physiological standard, but it is provided that doubtful cases can be referred for examination by a specialist. With regard to the difficult subject of colour vision, it is notorious that there are differences of opinion in respect of the Board of Trade standards and existing regulations for master mariners and engine-drivers. Dr. F. W. Edridge-Green, by work of the highest physiological quality extending over many years, has been able to show that more than half the colour-blind persons can pass the Holmgren wool tests, tests which, moreover, may lead to the rejection of candidates with normal colour vision. In consequence, Dr. Edridge-Green's lantern has been adopted by the Navy for the standardisation of colour perception, a reform which ought soon to take place in the regulations of the Board of Trade, by which the examinations of the civilian aeronaut are guided.

Ear Examination and Vestibular Apparatus.

With regard to the vestibular apparatus, the value of routine examinations by the various Barany tests has not been finally accepted by the Royal Air Force, further investigation having been undertaken into the records which have been kept. A reference is given in the selected bibliography (attached to the pamphlet) of the printed work in this direction which has been published in the United States, where great importance is attached to the Barany tests.

The following are the directions for the examination or re-examination of candidates, to see that they possess hearing sufficiently acute to detect accurately signals and ascertaining minor defects in engines.

(i.) *Hearing.*—The hearing in either ear must be acute, that is, equivalent to a forced whisper at a minimum distance of 20 feet, each ear being tested separately with the meatus of the other side occluded and the face turned away. In cases of failure, when it is considered that treatment may bring the hearing up to standard, the subject may be temporarily deferred and re-examined at a later date.

(ii.) *External ear meatus and membranes.*—(Apparatus required: usual ear examining instruments.) *(a)* Meatal infections and obstructions, while not permanently disqualifying, must be satisfactorily cured or removed before acceptance. *(b)* A permanent dry perforation in the membrane constitutes a disqualification for air work. *(c)* Cicatrices of the drum of long standing, unless obviously liable to breakdown under alterations of atmospheric pressure, may be passed, provided that the hearing is up to standard and that there is no cause in the nose, pharynx, or naso-pharynx for reinfection.

(iii.) *Middle ear and Eustachian tubes.*—*(a)* Catarrhal or suppurative otitis media. If the condition is acute or subacute the applicant or airman should then be referred for treatment and subsequently re-examined. Chronic suppurative otitis media is a cause for rejection, as also the radical mastoid operation, successful or otherwise. A healed operation for acute mastoid suppuration, with satisfactory hearing and a sound membrana tympani, need not be considered a cause for rejection. *(b)* Oto-sclerosis should constitute a cause for rejection. *(c)* The examiner should satisfy himself that both Eustachian tubes are patent, and should reject cases of permanent obstruction, but not temporary ones.

(iv.) *Cochlear apparatus.*—"Nerve deafness" or any other disability of the cochlea or cochlea nerve tract should not be present. Applicants or airmen suffering from affections of the internal ear, accompanied by deafness or labyrinthine symptoms, should not be accepted for air work.

Examination of Nose, Throat, and Buccal Cavity.

The Report points out that anything tending to block the upper respiratory passages by interfering with the ventilation of the lungs constitutes a great disability for the carrying out of any duties in the air; and under this heading the wise precaution is added that symptoms, apparently trifling in importance on the ground, may be considerably aggravated in the air. While the medical examiner must bear this in mind in estimating the circumstances of the ears, nose, and throat, he is wisely enjoined to give due weight to the previous flying history. If a candidate has shown no disability in these directions when flying, the absolute evidence in his favour is to be considered before negative evidence resting on presumption. The instructions run as follows:—

(i.) *Buccal cavity.*—Carious teeth, gingivitis, and pyorrhœa must be successfully treated before acceptance. Artificial teeth do not disqualify, but care must be taken that the plates are well fitting.

(ii.) *Pharynx.*—Tonsils. *(a)* Enlarged tonsils which produce obstruction, or which become repeatedly inflamed or associated with attacks of quinzy, must be enucleated before an applicant can be accepted. *(b)* Septic tonsils, even only unhealthy remnants, from which the septic material can be expressed, or which cause repeated sore throats or chronic enlargement of the glands of the neck, must be enucleated.

(iii.) *Naso-pharynx.*—Adenoids, however small in amount, when causing repeated colds, with acute or subacute Eustachian obstruction, or catarrhal or suppurative inflammation of the middle ear, should be removed before an applicant is accepted.

(iv.) *Nose.*—*(a)* Mouth-breathing constitutes a serious flying disability. *(b)* Deviated septum. If this blocks more than half the air-way in one nostril, or is associated with frequent colds or headaches, it should be remedied by operation before the applicant's acceptance. Slighter degrees may be ignored. *(c)* Turbinal hypertrophy should also be remedied by treatment before an applicant is accepted. *(d)* Infection of the accessory sinuses. Acute infection must be cured before accepting an applicant. Chronic suppuration constitutes a cause for rejection. If the antra alone have been affected, and a satisfactory operation has been performed leaving a free opening into the inferior meatus, and the subject is, in addition, free from all signs or symptoms, he may be accepted. Permanent drainage into the mouth should not be regarded as a satisfactory operation. *(e)* Nasal polypi must be removed and the cause cured before acceptance. *(f)* Atrophic rhinitis should constitute a disqualification.

(v.) *Larynx.* Should hoarseness or any symptom or sign pointing to a laryngeal affection be present, a careful examination of this portion of the upper respiratory tract should be made.

A Valuable Report.

This able Report has been drawn up for the Royal Air Force by Lieutenant-Colonel C. B. Heald, medical adviser to the Civil Aviation Department, and is founded on a confidential document, written earlier by Mr. A. H. Cheatle, Dr. G. A. Sutherland Colonel H. C. T. Langdon,

[1] The Medical Examination of Civilian Pilots, Navigators, and Engineers. London: His Majesty's Stationery Office. 1920. To be purchased through any Bookseller or directly from H.M. Stationery Office. 6*d*. net.

and Colonel Heald himself, later elaborated by Colonel Martin Flack; the valuable papers in our columns by the last-named indicate his share in forming the Report. It remains to congratulate Colonel Heald, and all who helped him, upon a straightforward and informing guide to the physical examination of the civilian aeronaut; and it may be added that the instructions will be very useful for the grading of any persons who are candidates for employment in positions of trust where industrial fatigue will play a part.

PELLAGRA IN EGYPT IN 1918.

REPORT OF THE COMMITTEE OF INQUIRY.

IN 1918 there were many prisoners of war in Egypt, amongst whom a disease appeared soon recognised as pellagra, the number of cases growing till it became serious. On Oct. 6th, 1918, a Committee was appointed, under Colonel F. D. Boyd, to examine the situation and to advise how it should be met. The report of the Committee, dated Dec. 31st, 1918, has been appearing in the last five numbers of the *Journal of the R.A.M.C.*, and its conclusions are of great interest. Not only did the Committee clear up the problem of pellagra in Egypt, but it has put on record observations that will have to be remembered by everyone who has in future to draw up any diet scale. All medical officers who read this well-arranged report will feel the importance of daily watching the condition of the rations supplied to their units and of paying attention to the work of the cooks, while the study of the Committee's clinical observations on pellagra will well repay the physician.

Pellagra as it occurred in Egypt is a deficiency disease due to insufficient assimilation of protein and characterised by erythema and pigmentation of the exposed parts of the body (on the back of the hands first, a fortnight later the nose, later on the feet, these discoloured patches being dry and not sweating even under pilocarpine); this is followed by a profound disturbance of nutrition with early wasting of the muscles of the shoulder-girdle, and progressively increasing fall in blood pressure. Loss of appetite is a very early symptom and there is defective secretion of hydrochloric acid in the gastric juice. Herewith there is impairment of digestion, both gastric and pancreatic, mal-assimilation of both protein and fat, and an increased bacterial growth in the intestine, with intermittent diarrhœa leading to further loss of food ingested, but incompletely absorbed. Also the enhanced destruction of proteids gives very foul-smelling stools and indican appears in the urine in increasing quantities; apathy comes on, perhaps melancholia, and the patient dies. The disease picture suggests suprarenal inadequacy, and, in fact, in the recorded cases the suprarenals averaged 15 gr. lighter in the pellagra cases than in the controls. There is no evidence of specific bacterial or protozoal infection. Death is due to some intercurrent infection; pneumonia, dysentery, tuberculosis, or malaria accounted for 91 per cent. of deaths. The disease occurred in Turkish camps, not in the camps of Germans alongside, where there was money to buy extra food. Spot maps showed that there was no infection from place or person.

Preventive Measures.

The important question was how this disease was to be prevented. Investigation showed that 88 per cent. of the cases had arisen amongst newly captured Turkish prisoners of war, who before capture had for months only had available two-thirds of their normal ration, and had so suffered "from long-continued under-nutrition," as their German general had reported already the year before. Further, the protein of their diet came mostly from wheat, barley, or maize, very little from meat. Now Hopkins and Willcocks, in 1907, showed that the chief protein of maize cannot keep rats alive, as it does not contain enough tryptophane, an amino-acid of the aromatic series; in 1913 Sandwith suggested that want of tryptophane might help to cause pellagra. The Committee called in to help them Professor W. H. Wilson, of the Cairo School of Medicine, who has long been working at the different nutritional values of the proteins, which seem in part to depend on their individual amino-acids. For the making of adrenalin a benzene nucleus is essential. For the production of this the human organism depends upon the hydrolysis of special proteins in the food-supply, and even then the yield of tryptophane in this process may be broken up by an overwhelming bacterial flora in the duodenum. Every diet scale considers how much protein is necessary for the man of 70 kg., which is agreed at 40 g. daily. But that means grammes absorbed, and for normal people must be increased by one-tenth; but experiment proved that for Turkish prisoners it required to be increased by one-half. So that, even if they had got full rations, the Turks would have been underfed. But, further, they were fed on the wrong proteins. Professor Wilson had calculated the "biological value of the proteins" (B.V.P.) of various foodstuffs, and had found that, to replace 30 g. of meat as protein supply in a man's diet, 34 g. of rice-protein were necessary, 50 of beans, 76 of bread, and 102 of maize. And that is why maize-eating people suffer proverbially from pellagra; it has the lowest B.V.P. of all the cereals, and, of course, if it is damaged or decayed it is all the less nutritious and pellagra arises more quickly. Vegetable proteins are not so easily assimilated as those in meat, and, further, the beans for the prisoners were not at first well cooked. These difficulties were all adjusted, but it appeared that men might escape pellagra on a particular diet while they were resting, but succumbed as soon as they worked hard; so the diet for heavy labour, though showing already sufficient calorie value and vitamine content, had to be increased; then the pellagra ceased.

Lieutenant-Colonel P. S. Lelean and Professor H. E. Roaf have done excellent work is disentangling, with Colonel Boyd, a complicated problem.

SCOTLAND.

(FROM OUR OWN CORRESPONDENT.)

Hospital Finance in Aberdeen: New and Successful Efforts.

ON April 24th, when an excellent concert was given to a packed house in the Tivoli, the students of Aberdeen University completed a successful gala week on behalf of the finances of the Aberdeen Royal Infirmary. The week commenced with a concert in the debating hall, Marischal College. On the following day a football match was played between the University and the Aberdeen clubs, and a largely attended thé dansant was held in the Mitchell Hall. On April 23rd students paraded all the principal streets in fancy dress with collecting boxes, and in the evening organised a torchlight procession. The various events of the week were well advertised by a number of undergraduates, who took their turn at parading the streets of the city as sandwichmen. Women students took a prominent part. The gala week was a new and most successful effort organised by the Students' Representative Council; and it is to the work of the office-bearers of that body that the excellent results are in large measure due. The total sum collected was £1496 4*s.* 11*d.*, and after meeting expenses of £21 13*s.* 6*d.*, there remains £1474 11*s.* 5*d.* to be handed over. The successful efforts on the part of the students appear to have coincided with a widespread determination on the part of employers and employees of the large city firms to increase their responsibilities in the financing of the local hospitals. The initiative has been taken by the workmen in the employment of Hall, Russell, Ltd., shipbuilders, who, as the result of a ballot, have unanimously decided to double their annual contribution to the hospitals in the city. The new subscription per man will be: those earning £2 per week and under, 2*d.* per month; those earning over £2 per week, 4*d.* per month.

University of Aberdeen: Halls of Residence for Students.

At a meeting of the Senatus of the University of Aberdeen held on April 28th, Principal Sir George Adam

Smith in the chair, a report by the special committee appointed to consider the question of halls of residence for students and other members of the University was approved in principle and forwarded to the Court. New regulations for the diploma in public health were also considered and forwarded to the Court.

Mother and Child Welfare Centre in Aberdeen.

The new Mother and Child Welfare Centre premises in the Castlegate, Aberdeen, were formally opened on April 30th. The building consists of a converted army hut, which contains a doctor's-room, weighing-room, a lecture hall for mothers, a provident-room, and a "toddlers' room," with an excellent shelter for the children leading on to a spacious playground, which is situated so as to obtain plenty of sunshine. Dr. J. A. Stephen, who is medical officer for the child welfare scheme in Aberdeen, will be in daily attendance. Lectures on health, the rearing of children, cooking, &c., will be given weekly, while the playground at the back of the building will be available daily for children under 5 years of age with their mothers. Mrs. Raitt, a member of the centre, has been successful in winning the competition for the Rhondda Mothercraft Challenge Shield, presented by Viscountess Rhondda and open to mothers attending welfare centres throughout Scotland. The subject of the competition was an essay on the important points in rearing children. The shield is held by the successful centre for one year, and if won three times in succession becomes the property of the centre.

The late Dr. J. Ironside of Laurencekirk.

The death took place at Laurencekirk on April 24th, in his seventy-sixth year, of Dr. James Ironside. Dr. Ironside was a native of Bonnykelly, in the parish of New Deer. He commenced practice in New Pitsligo, and in 1870 he took over the late Dr. Campbell's practice in Laurencekirk, where on his recent retirement he had just completed 50 years unbroken professional service. Dr. Ironside was an expert agriculturist and tenanted in succession several large farms. He was for a number of years a member of the town council of Laurencekirk and acted as chairman of the Lighting Society. He is survived by his widow and a family of three sons and three daughters.

Dr. Francis William Nicol Haultain has been appointed an additional inspector of anatomy for Scotland for a period of two months from April 20th.

May 3rd.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Dublin Corporation and an Eight-hour Day for Nurses.

THE corporation of Dublin has been in the habit of making grants, varying in amount, to the several Dublin hospitals. The corporation has now directed that as a condition precedent to giving grants the hospitals must establish an eight-hour day for nurses. This demand is one of the first results of the success of the Labour candidates at the recent municipal elections. It may be admitted that in Dublin, as elsewhere, nurses have been underpaid and sometimes over-worked, but an eight-hour day, however suitable a standard it may be for labour under ordinary conditions of continuous work, appears to be inapplicable in the case of discontinuous work such as nursing. It may not be possible for the hospitals to meet the demand of the corporation, and if the corporation presses its wishes the hospitals may find themselves deprived of support which, small as it is, can be ill spared at present.

Medical Man Killed in Motor Accident.

Dr. A. P. Spelman, of Dunmore, Co. Galway, was killed last week in a motor accident. When turning a corner the car skidded and overturned, pinning Dr. Spelman, his man, and a friend underneath. The other two were not seriously injured, but Dr. Spelman had been caught by the steering wheel and was killed instantaneously. He was only 26 years of age.

The Question of a Surgical Tuberculosis Hospital for Belfast.

Sir Henry Gauvain's report has now been received upon the suitability of "Graymount," the property on the north side of Belfast recently acquired by the corporation for a sanatorium for bone and gland tuberculosis. While making little of the climatic objections raised against the site, he objects in principle to the attempt to adapt a private residence to the purposes of a surgical hospital on the ground of expense and inconvenience. He advises the selection of a new marine site, laying down at length the desiderata to be borne in mind, "Graymount" to be used temporarily as a hospital and retained later as an after-care institution for certain types of surgical tuberculosis needing prolonged treatment. The report has been sharply criticised in the local press, which claims that the site, if unsuitable for one purpose is unsuitable also for the other, and which finds Sir Henry Gauvain's ideal scheme too Utopian. The familiar view is taken that it would be more economical for the present to concentrate upon the provision and improvement of housing, so as to resist tuberculosis generally, than to spend any money in a special direction.

Belfast Ophthalmic Hospital.

The main features brought forward at the annual meeting of the Belfast Ophthalmic Hospital—the oldest eye institution in Belfast—on April 27th were the great increase in patients—214 more eye patients and 190 more ear and throat, while the number admitted to the wards was almost double that of 1918; the good financial position—a debit balance of £5 4*s.* 9*d.* carried forward last year is now turned into a credit balance of £93 19*s.* 5*d.*; and the further progress of the proposed amalgamation of the Belfast Ophthalmic Hospital with the Ulster Eye, Ear, and Throat Institution. During the past year the combined staffs of the two hospitals have considered the matter and have wisely agreed on a good scheme of amalgamation, so as to have one great eye hospital worthy of the city of Belfast. The only difficulty is the legal one, how far the trust-deeds could be adapted to the proposal. It is really absurd that in these days of progress we should be tied by ancient forms, which are disadvantageous now both to the hospitals concerned as well as to the public.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Laënnec Institute.

A COMMITTEE was formed some months ago to work out the best way to commemorate the distinguished Breton doctor who invented auscultation 100 years ago, and thus gave to medicine not only a method fertile in results, but the stethoscope itself. The subscriptions have amounted to quite a considerable sum; the committee, having discarded the idea of an elaborate monument, has now decided on the much more useful establishment of a Laënnec Institute for the study of the prophylaxis and treatment of tuberculosis. The principal activities will be directed to the erection of laboratories, dispensaries, and sanatoriums, and the organisation of crusades in France and elsewhere. The constitution of the Institute has recently been adopted by a general meeting of the French Faculty of Medicine, which has at the same time nominated an administrative council. The officials elected include Professor Letulle, president; Professors Gley, Calmette, Vaquez, and Dr. Sergent, vice-presidents; Dr. Gallois, general secretary; and M. Robert Laënnec, treasurer.

Lethargic Encephalitis.

The present epidemic appears to be on the decline; few new cases are being reported. None the less, more and more papers are being published on observations already made. M. Levaditi has published an interesting study of the filter-passing virus of this disease, which

can be inoculated into rabbits. The lesions present microscopical characters which allow of a distinct differentiation of this virus from that of epidemic poliomyelitis, with which many clinical workers have sought to identify it. M. Netter has recently given a lecture at the Academy of Medicine on the infectivity of lethargic encephalitis. He has now no doubt that it is infectious, though cases of direct infection are rare. He quotes the case of a girl who came to Paris from a provincial family, a member of which developed the disease after her departure. On arrival in Paris she apparently conveyed the infection to two cases which arose in her immediate neighbourhood. M. Netter suggests that the virus is probably carried in the saliva. He thinks that many people are naturally refractory and may nevertheless be carriers of the germ. The isolation of patients would thus be desirable but impracticable, because the long duration of the disease and the frequency of relapses would necessitate a period of isolation disproportionate to the risk avoided.

The Transmission of Syphilis in Animals.

M. Auguste Marie, principal medical officer of Villejuif Hospital, and M. Levaditi, of the Pasteur Institute, have succeeded for the first time in the experimental transmission of syphilis in animals by sexual intercourse. It will be remembered that these workers have differentiated a dermotropic virus,[1] the cause of cutaneous and mucous manifestations, and a neurotropic virus with which these experiments are concerned. It is interesting to find that one animal can infect another by simple contact without any visible lesion. Some light may be thrown on such controversial questions as conjugal general paralysis of the insane and the mechanism of hereditary nerve diseases by a development of these experiments, which have already shown that the infected male loses some of his sexual activity, while the infected female remains potentially fertile.

Hospital for British Seamen on French Soil.

The foundation-stone of a hospital for sick or wounded British seamen was laid at Marseilles on May 2nd by Lady Burghclere, to whose efforts its erection is largely due. The hospital will be well equipped, will contain 64 beds, and will afford treatment for all diseases. It is situated in open country near the port, and when completed will doubtless be much appreciated by the mercantile marine. The fund is not yet complete, £5000 being still needed.

May 4th.

URBAN VITAL STATISTICS.

(Week ended May 1st, 1920.)

English and Welsh Towns.—In the 96 English and Welsh towns, with an aggregate civil population estimated at nearly 18 million persons, the annual rate of mortality, which had declined from 18·7 to 14·5 in the five preceding weeks, further fell to 14·2 per 1000. In London, with a population of nearly 4½ million persons, the annual death-rate was 13·7, or 0·5 per 1000 below that recorded in the previous week, while among the remaining towns the rates ranged from 5·4 in Oxford, 5·9 in Ilford, and 7·1 in Bath, to 24·1 in Sunderland, 24·3 in Tynemouth, and 26·3 in West Hartlepool. The principal epidemic diseases caused 321 deaths, which corresponded to an annual rate of 0·9 per 1000, and comprised 123 from measles, 80 from whooping-cough, 55 from infantile diarrhœa, 44 from diphtheria, 12 from scarlet fever, and 7 from enteric fever. Measles caused a death-rate of 1·7 in Norwich, 2·4 in Newport (Mon.), and 3·0 in Wigan; and whooping-cough of 1·3 in Norwich, 1·4 in Bootle, 1·6 in Darlington, and 2·6 in Stockon-on-Tees. The deaths from influenza, which had declined from 392 to 259 in the five preceding weeks, further fell to 202, and included 45 in London, 11 each in Birmingham and Sheffield, 10 in Bolton, 9 in Bradford, and 8 in Halifax. There were 1951 cases of diphtheria, 1831 of scarlet fever, and 12 of small-pox under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, against 1965, 1845, and 23 respectively at the end of the previous week. The causes of 27 of the 4846 deaths in the 96 towns were uncertified, of which 4 were registered in London and 2 each in Birmingham, Liverpool, St. Helens, and Sunderland.

Scotch Towns.—In the 16 largest Scotch towns, with an aggregate population estimated at nearly 2½ million persons, the annual rate of mortality, which had increased from 17·2 to 19·2 in the four preceding weeks, fell to 18·3 per 1000. The 438 deaths in Glasgow corresponded to an annual rate of 20·5 per 1000, and included 33 from influenza, 24 from measles, 4 from infantile diarrhœa, 3 each from small-pox, whooping-cough, and diphtheria, 2 from scarlet fever, and 1 from enteric fever. The 100 deaths in Edinburgh were equal to a rate of 15·3 per 1000, and included 3 from measles, 2 from influenza, and 1 each from whooping-cough and infantile diarrhœa.

Irish Towns.—The 215 deaths in Dublin corresponded to an annual rate of 27·0, or 1·5 per 1000 below that recorded in the previous week, and included 13 from whooping-cough, 7 from measles, 4 from influenza, 3 from infantile diarrhœa, 2 from diphtheria, and 1 from scarlet fever. The 158 deaths in Belfast were equal to a rate of 19·9 per 1000, and included 10 from influenza, 4 from whooping-cough, 3 from infantile diarrhœa, 2 each from scarlet fever and diphtheria, and 1 from measles.

[1] THE LANCET, April 10th, p. 829.

Obituary.

SIR HENRY BURDETT, K.C.B., K.C.V.O.,

EDITOR OF THE "HOSPITAL"; AUTHOR OF "HOSPITALS AND CHARITIES."

ALL the medical profession will unite with us in regretting the not unexpected death of Sir Henry Burdett, which occurred on Thursday in last week as the result of a six months' illness, in his seventy-third year.

The son of a Leicestershire clergyman, Burdett began his strenuous life on a stool in a bank, but quickly manifested an interest in medicine, and was for a period a medical student both in Birmingham and in London. But before completing his curriculum he found an outlet for his combined knowledge of business technique and hospital routine in the secretaryship of the Queen's Hospital, Birmingham. To this post he was appointed at the early age of 21, and after holding it for six years was translated to the Seamen's Hospital, Greenwich, in a similar capacity. Here, also, he remained for six years, and so impressed the authorities with his industry, capacity, and power of organisation that he was appointed to the important post of secretary to the Share and Loan Department of the Stock Exchange. In this position he remained for 17 years, and the work that he did there has left a permanent impression on the commercial life of the country, for he compiled "Burdett's Official Intelligence," a repository of information on Stock Exchange securities, and wrote many papers on Imperial, colonial, and municipal finance, and others illustrative of the influence of modern invention upon industrial developments. It was during this time that his book entitled "Prince, Princess, and People" appeared and attracted influential attention. Written as a Christmas Number of the *Hospital*, it grew into a sketch of social progress and development, as illustrated by the public life and work of the late King and of Queen Alexandra, when Prince and Princess of Wales.

If he had done no more than this he would be displayed as a valuable servant of the public, but Burdett is better known, not only to medical men but to the world, for his work in behalf of voluntary hospitals and the calling of nursing. As hospital secretary he had at his fingers' ends the real needs of these institutions and the best methods of securing voluntary assistance. Over 30 years ago he saw that there was a middle-class population, between those whose environment allowed of complete treatment in their homes and those who had a right to complete charitable assistance, for whom no institutional treatment was provided, and the result was the opening of the first hospital for paying patients in Fitzroy-square. Later he organised the first hospital conference, which led in 1884 to the institution of the Association of Hospital Managers. In these efforts, which were revolutionary in many directions in their day, he secured, now and again with some difficulty, the coöperation of the *British Medical Journal* and THE LANCET, but later he founded his paper, the *Hospital*, more exactly to express the side of medical service with which he was personally acquainted, and to record the activities of hospital and nursing life. He

had already been one of the earliest workers in the cause of the Hospital Sunday Fund, which was founded at the Mansion House in 1873 during the mayoralty of Sir Sydney Waterlow. The pattern for this great movement was supplied by the "Hospital Sunday" previously inaugurated by Canon Miller in Birmingham, and the translation of the idea to London, with its subsequent huge success, will always be associated with the names of Waterlow, Burdett, and the then editor of THE LANCET, James Wakley.

In 1887 Burdett established the Royal National Pension Fund for Nurses, and although in his many efforts to organise a system of training for nurses his views were often challenged, what he did for the profession of nursing was immensely valuable, as everyone will admit who knows the history of the Pension Fund. And in yet another way he has placed the philanthropic world, as well as the medical profession, under a deep obligation, for in 1883 he brought out "Hospital Charities: a Year-book of Philanthropy," which has become the leading book of reference on all that concerns the organisation of hospitals and the life and work of their nursing staffs. It was right that such a man should receive public honour, and when Sir Henry Burdett was created K.C.B. in 1897, and K.C.V.O. some ten years later, no one who knew the devoted nature of his services thought that such rewards were over-generous.

Personally, Burdett was an interesting and attractive man. A former colleague writes of him:—

Those who at any time worked in close association with Sir Henry Burdett and visited him at The Lodge, Porchester-square, knew him as a kindly, hospitable, home-loving man. Until quite recent years, when death took one after another from the home circle, he was singularly happy in his family life. One always found him in the large library on the ground floor overlooking the lawn, where he spent a large part of the day and did most of his work. Even in personal conversation he never could subdue the instinct for oratorical effect, for the dramatic pause with glittering eye and wide-armed gesture. His books and articles were dictated to an invisible audience, and, as a result, his literary work often had something of the diffuseness and floridity of platform speech, with the characteristic personal touch a little caricatured by cold print. Nevertheless, he was an accomplished and alert journalist, eager for the success of his papers, and well versed in the various branches of editing and publishing. His mind in general moved along large lines towards large objectives; but while he much preferred to depute the working out of details to others, he could, if need be, get down to the smallest parts of a big scheme, and handle them with bold dexterity. He was a man of strong and commanding personality; by no means an "intellectual," but with very great mental powers. The qualities that especially stand out in one's memory of Sir Henry Burdett are his unquenchable enthusiasm, the bigness of his ideas and projects, and his persuasive eloquence. As a colleague he was most kind, courteous, loyal, and considerate; he could not be shaken from his opinions, but when he said he would do a thing he kept his word.

To this intimate tribute we subscribe from our own knowledge. Burdett's courage, sincerity, and industry were remarkable, and the fruits of his qualities will be reaped by many to come.

He married in 1897 Helen, daughter of Mr. Gay Shute, who bore him two sons and two daughters, and predeceased him by a few months.

SIR KENDAL FRANKS, M.D., F.R.C.S. IREL.

Kendal Matthew St. John Franks, whose death in Johannesburg on May 1st is announced, was in his seventieth year. A native of Kilkenny, he took an Arts degree at Dublin in 1872, graduated in medicine three years later, and spent some time at Leipzig. Elected early to the staff of the Adelaide Hospital, Dublin, he became its senior surgeon, Vice-President of the Royal College of Surgeons in Ireland, and examiner in surgery at the University. The Boer War took him to South Africa as consulting surgeon to the forces from 1899–1902. He was rewarded with a C.B. and then settled in Johannesburg, where he became honorary surgeon to the hospital and president of the South African Committee of the British Medical Association. He received a knighthood in 1904.

Correspondence.

"Audi alteram partem."

X RAY DATA IN DIAGNOSIS OF CARDIAC ENLARGEMENT.

To the Editor of THE LANCET.

SIR,—It appears that certain methods of detecting and estimating cardiac enlargement by means of the X rays (I find from letters I have received) are by no means generally known, although two of them, (B) and (C), in the *Archives of Radiology and Electrotherapy*, of May, 1919, are referred to as having appeared in THE LANCET of Nov. 30th, 1918 (p. 750). These methods, as carried out by me, three in number, are as follows:—

(A) *The "Cardio-Thoracic Ratio."*[1]—With the focus of the X ray tube at a distance of 6 feet (but 2 feet is just as good), the greatest transverse heart diameter (calculated by adding the part-diameter of heart in right fourth intercostal space to right of median line to the part-diameter in left fifth space to left of median line), should normally be 39–50 per cent. of greatest diameter of thorax, in mid-inspiration. Over 53 per cent. in adults is pathological.

(B) *The "Index of Depth."*—With tube-focus at a distance of 2 feet, an exposure is made—of a half second is best—the tube is moved 10 cm. to right and a similar exposure is made on same X ray plate (or better, a Dupli-Tized film with two intensifying screens). Two impressions of diastole of heart are seen after development. In the adult an apex-displacement of 7–14 mm. is normal (20 mm. and above is pathological).

(C) *The "Angle of Disappearance of the Apical Shadow."*—With the fluorescent screen on the dorsum, rotate patient's body in the upright screening-stand until cardiac apex coincides with spinal apophysis; measure the angle made between the bi-scapular line and the screen-surface. If of 25–30° it is normal, over 30° indicates augmentation of the ventricular volume.

As regards (B), the ideal exposure is for the time of one cardiac cycle, not more and not less, as far as possible. What is wanted is two well-defined impressions of two separate diastoles.

(C) A simple goniometer is made from two 10 by 6 plates covered with thick paper and hinged; the exact angle is easily measured with it.

The ortho-diagraphic and telephotic methods are of course well known.

I am, Sir, yours faithfully,

C. FRED. BAILEY.

Royal Sussex County Hospital, Brighton,
May 1st, 1920.

BLIND MASSEURS.

To the Editor of THE LANCET.

SIR,—In your issue of April 17th, there appeared a letter from Miss Magill on the subject of blind masseurs. With reference to the early paragraphs of her letter I need only say that the writer gives expression to opinions which are not shared by all authorities, as has been clearly shown by the recent correspondence in your journal. With regard to Miss Magill's statement that the sighted workers in a large department invariably find that they have extra labour thrown upon them where a number of workers are blind, this I can assure your readers is by no means the experience of officials in establishments where blinded soldier masseurs are employed.

Miss Magill next dwells upon the depressing effects upon the patients of the ministrations of blind masseurs. In regard to this, and to the efficiency of blind masseurs generally, I cannot, I think, do better than quote from a letter which I have received from Major-General Sir Robert Jones, C.B., F.R.C.S., L.R.C.P., which states:—

"The work that your blind masseurs do is very exceptional in quality. They are in every sense of the term a great success. I find them all intelligent and possessed of a wonderful gift of touch, together with keen enthusiasm for their work. Apart from their qualities as masseurs, I think they have an extraordinarily good psychological effect upon their patients. I consider institutions which secure the services of these men trained at St. Dunstan's very fortunate."

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[1] Archiv. Rad. and Elect., February, 1920, p. 301.

Miss Magill ends her letter by saying that blind masseurs are apt to feel their work to be more than they can accomplish. In regard to this, I can only say that I am in very constant communication with the great majority of the blinded soldiers who have been trained as masseurs at St. Dunstan's, and that I have never heard anything of this kind from any of them. It may be that Miss Magill refers to the two cases of men who, when they got into actual work, found that their health was not sufficiently good to endure the strain which the active practice of massage involves. But 2 out of 92 is not a very large percentage, is it?

I am, Sir, yours faithfully,

ARTHUR PEARSON.

The Association of Certificated Blind Masseurs,
Great Portland-street, W., April 26th, 1920.

To the Editor of THE LANCET.

SIR,—In THE LANCET of April 17th there is a letter from Miss E. M. Magill on the above subject. The letter abounds in sweeping generalisations, but I sought in vain for a statement verified by fact. For instance, the following paragraph appears:—

"I should like to point out that the sighted workers in a large department *invariably* find that they have extra labour thrown upon them where a number of the workers are blind, as it is *universally admitted* that special cases have to be picked out for the latter." (The italics are mine.)

Now as I have had charge of the physical treatment departments at Alder Hey for nearly four years, when many thousands of cases have been treated by massage, at times as many as 600 treatments being given daily in the massage department, I may claim to speak for a "large department." Further, we had six blinded masseurs from St. Dunstan's on the staff of this department. I most emphatically deny that any of the workers had extra work thrown on them because of the presence of blinded masseurs. Indeed, the reverse was the case, as cases requiring especially vigorous treatment were spared the masseuses, and given to the masseurs. I might also add that certain cases *must* be treated by a masseur, as it is obviously inexpedient for them to be manipulated by a masseuse. Further, I deny strongly that "special cases have to be picked out for the blind masseurs." As a matter of fact, if there has been any "special selection" it has occurred when a particular case required especially careful and skilful massage. Such a case was invariably allotted to the head blinded masseur, whom I considered by far the best exponent of the art amongst the staff. So that in fact the *masseur* was "picked out" for the case.

A very important point in the treatment of soldiers and pensioners by blinded masseurs is the psychic element. There is comfort, sympathy, and that "fellow feeling which makes one wondrous kind" in the knowledge that one wounded pensioner is being treated by the whole-hearted efforts and enthusiastic endeavours of a fellow-disabled pensioner, and who can deny that this mental concomitant to the massage has not an efficacious influence on the treatment? Very frequently have I had a request from a patient to be allocated to a blinded masseur. Still, Miss Magill states in her letter that "many medical men tell her that frequently patients object to being treated by blind masseurs." Such has not been my experience. I must candidly admit that when it was first suggested that a blinded masseur should be included in the staff at Alder Hey I was sceptical as to the practicability of such an experiment; but when I found what capable, careful, enthusiastic and skilled workers were turned out by St. Dunstan's, I was ashamed of my scepticism, and thereafter it was my constant endeavour to obtain more blinded masseurs. I was extremely fortunate in obtaining six of them, and a more loyal, industrious, and capable sextet it would be impossible to find. Frequently Sir Robert Jones, as well as other surgeons on the staff at Alder Hey, expressed eulogistic opinions with regard to the results of the treatment by the blinded masseurs.

From the above remarks it will be understood that I feel it incumbent on me to resent unkind and unfair attacks which are calculated to traduce their ability, and to militate against their chances of obtaining an honest livelihood in a calling for which they are capably trained, and in which their tragic disability proves to be no hindrance.

Finally, may I adduce one further proof of my contentions? Several months ago—I am proud to say at my instigation—a clinic was opened at Liverpool for massage, remedial exercise—and electrical treatment, and staffed by four blinded soldier masseurs. I am glad to state that they have had a remarkable number of patients, both private and pension cases, and have had signal success. That there has been success I am prepared to vouch for by the testimony of patients themselves, as well as the medical men who have sent them. As a last word may I have Miss Magill's permission thus to paraphrase the old adage, "De militibus cæcatis nihil nisi bonum"?

I am, Sir, yours faithfully,

W. H. BROAD, M.D.,
Major, R.A.M.C. (T.F.).

Rodney-street, Liverpool, April 24th, 1920.

To the Editor of THE LANCET.

SIR,—In fairness to other candidates, may I be allowed to comment on Sir Arthur Pearson's letter in your issue of April 24th? It is there remarked that "in the recent *examinations* of the Incorporated Society of Trained Masseuses" a blinded soldier from St. Dunstan's "passed first *in all subjects*," a statement which would seem to imply that the same candidate passed first in all three examinations. The man in question did excellently in the examination in massage, and headed the list of successful candidates, the marks in the separate subjects of anatomy, theory and practice of massage not being published. In the special examination in exercises as an adjunct to massage, held for blind candidates only, a fellow student from St. Dunstan's gained the first place, whilst, as is no doubt well known to many of your readers, our examination in medical electricity is not open to the blind.—I am, Sir, yours faithfully,

E. W. BLISS,
Chairman of Council, Incorporated Society of
157, Great Portland-street, W., Trained Masseuses.
April 28th, 1920.

*** The question has been sufficiently discussed. It is clear that the blinded soldier makes an admirable masseur; that there must be circumstances in which he is at a disadvantage; and that all engaged in the organisation and employment of massage share in deep sympathy for the honourably wounded and in determination to give them full opportunity for their large range of valuable service.—ED. L.

BRADFORD'S MUNICIPAL HOSPITAL SCHEME.

To the Editor of THE LANCET.

SIR,—In your leading article on Hospital Principles you allude to the establishment of a municipal hospital in this city. May I inform you that the chairman of Bradford Corporation Health Committee, at an interview granted by request to some members of the staffs of our voluntary hospitals, gave us to understand that he himself has no intention or wish to do more than supplement the work of the voluntary hospitals by the municipalisation of St. Luke's? At present that step will add only some additional 150 or 200 beds to those already required for other purposes (maternity, venereal, children's, infants', and so forth), a number, of course, totally inadequate for Bradford's needs. He therefore does not see that the voluntary hospitals will be much or soon affected by the scheme. The chairman's view and desire is one thing; the march of events is quite another. When one set of hospitals can draw on the rates compulsorily for their support, while others depend on freewill offerings, there can be little doubt that in a short time the rate-supported hospitals will choke the others.

In my judgment we ought to have settled questions of principle before considering details; and the question of principle is: Has a sick person, whatever his means, a right to demand free attention at the cost of his town or country and when did he obtain such right: If he

does so, is he not a pauper, even if he is not called so? If so, ought he to have the right of voting his own subsidy and of determining the scale on which it is to be provided? Is not the granting of such a right a danger to the town and to the State?

I am, Sir, yours faithfully,

Bradford, May 1st, 1920. A. RABAGLIATI.

INFANTILE DIARRHŒA AND VOMITING.

To the Editor of THE LANCET.

SIR,—As Dr. G. Douglas Sherwood says, in his paper in THE LANCET of April 24th, now is the time when "the preservation of infant life becomes of the utmost importance," and with your permission I respectfully suggest a cause other than infectivity. The disease primarily affects children at an age when the skin is unpigmented and has no power of producing pigment. Its seasonal incidence corresponds to the greatest amount of sunlight—that is to say, a comparative absence of sunlight corresponds to absence of this disorder. The diarrhœa and vomiting of very young children is more common in the bottle-fed than in the breast-fed, and may be accounted for by the breast-fed receiving more maternal care than the bottle-fed.

The similarity between the method of attack of this disease and sunstroke points to their being due to the same cause. Children are frequently attacked by the disease after many hours' removal from the sunlight, just as most of the cases of sunstroke among our soldiers in India occur in the night. Therefore I suggest that the electrical effect of light penetrating the skin may cause a dissociation of the metal calcium in the blood. It is well known, and has been known for many years, that the regular administration of lime-water to infants during the summer months is a valuable prophylactic.

I am, Sir, yours faithfully,

Didsbury, Manchester, May 1st, 1920. R. CRAWSHAW HOLT.

THE RELATION OF GENERAL MEDICINE TO OPHTHALMOLOGY.

To the Editor of THE LANCET.

SIR,—In the interesting and revealing letter printed in your issue of May 1st Mr. Charles Higgens relates a number of instances in which ophthalmic surgeons have been able to recognise that some of the local conditions which come under their observation are associated with, and in particular instances dependent on, more or less remote disturbances or generalised pathological states. In accordance with a healthy professional tradition these observations, and the lessons to be drawn from them, have been placed at the disposal of the medical profession, with obvious advantages both to practitioners and to patients. Mr. Higgens may well claim gratitude both for himself and his colleagues, and personally I was under the impression that so generally was this claim allowed that there could be no need to repeat it. As it appears Mr. Higgens considers repetition necessary, I shall not dispute his better judgment. Whether, however, the beginning of knowledge in this direction was really so recent as 1888 (the date Mr. Higgens selects) may be doubted, and a similar remark applies to the suggestion that the debt is due entirely to the ophthalmic surgeons. To take but a single example. I have before me a book of some 400 pages entitled, "The Use of the Ophthalmoscope in Diseases of the Nervous System and of the Kidneys; also in Certain other General Disorders," and this was published, not in 1888, but in 1871; and its author is the physician who, amongst other distinctions, now occupies the Regius Chair of Physic in the University of Cambridge. In these circumstances I for my own part cannot confine my gratitude to the narrow circle which Mr. Higgens defines. There were brave men before Agamemnon, and, to adapt the phrase to the present issue, not all of those worthy of fame boasted the art and craft of ophthalmic surgery. If Mr. Higgens will consult the book whose title I have quoted he may perhaps (though the ophthalmic surgeon has "no use" for the physician) be led to doubt whether the unqualified statement that "albuminuric retinitis is a late symptom and its occurrence is a sign that the patient is approaching his end" is quite such an accurate contribution to medicine as its dogmatic form proposes.

To pass from historical performances to the present position, Mr. Higgens, from the fashion in which he uses the terms "ophthalmologist" and "ophthalmic surgeon," would appear to regard ophthalmology and ophthalmic surgery as equal and synonymous terms. How such a proceeding can be justified I am at a loss to imagine, and it may find a practical criticism in the fact that to a recently founded lecturership in ophthalmology there was appointed but the other day a professor of anatomy, and that the predecessor of this gentleman was a physician. Everyone is ready, and more than ready, to recognise the values and triumphs of the ophthalmic surgeon, but to present him as the possessor of an exclusive interest and capacity over the whole field of ophthalmology is to approach perilously near the region of the ridiculous.

I am, Sir, yours faithfully,

Harley-street, W., May 3rd, 1920. C. O. HAWTHORNE.

LICE AS A CAUSE OF RINGWORM.

To the Editor of THE LANCET.

SIR,—I was very much interested in Dr. A. E. L. Wear's letter in THE LANCET of May 1st suggesting a causal relationship between lice and ringworm. It is certainly very probable that head-lice can and do act as carriers of the spores of the *Microsporon audinii*, but before accepting this as the only, or even main, mode of infection I would submit with due deference that the logic of the argument seems somewhat strained. With two such common conditions the class most likely to be infected with either or both is the same—namely, those people whose heads receive least attention from soap and water, or brush and comb; and these are the sufferers—the children in the elementary schools.

Again, anyone who sees large numbers of children suffering from lice or ringworm of the head must have been struck by two facts—namely, that the site of predilection for ringworm is a wide band running along the vertex of the scalp, whereas the site of predilection for pediculi capitis is the occiput. I agree with Dr. Wear that the question of the infectivity and incidence of ringworm of the head is one of some importance, but I am inclined to think that it is not quite the simple problem his letter suggests. For instance, in my experience ringworm is much commoner in blondes than in brunettes (allowing for the preponderance of the blonde type in England), and in those with straight hair than in those with wavy or curly hair. Also ringworm dies out at puberty or thereabouts; the spores seem unable to find their natural pabulum on adult heads, but pediculi do not by any means forsake the heads of adolescence or even maturity.

I am, Sir, yours faithfully,

Sheffield, May 3rd, 1920. E. F. SKINNER.

DEATH OF DR. H. M. ALLEN.—Dr. Henry Marcus Allen, who died at Avonmore-road, Kensington, on April 23rd, after an illness of over two years' duration, was formerly a well-known practitioner in Brighton. He was a son of Mr. Thomas Marcus Allen, and of a Somersetshire family. Born in 1844 at Brighton, Henry Marcus Allen spent his boyhood there, and at 14 became one of the original members of the 1st Sussex Rifle Volunteers, sworn in at the Town Hall in 1858. After spending some time at Oxford and Paris he entered St. Bartholomew's Hospital, where he qualified L.S.A. and M.R.C.S. in 1871 and held the posts of house physician, resident physician-accoucheur, and obstetric assistant. Two years later he was admitted a Member of the Royal College of Physicians of Edinburgh, and was elected a Fellow in 1882. In Regency-square, Brighton, where he started to practise, he won a large connexion, besides holding a number of appointments. Subsequently he moved to Hove, and latterly practised at East Sheen. Although it is many years since he lived in Brighton and Hove, Dr. Allen had not been forgotten, and his death was regretted by a large circle of friends and former patients. The funeral took place at the Parochial Cemetery, Brighton

The Services.

ROYAL NAVAL MEDICAL SERVICE.

Surg. Lieut. G. A. M. Anderson is promoted to Surgeon Lieutenant-Commander.

ARMY MEDICAL SERVICE.

Col. W. E. Hardy retires on retired pay.

Temp. Col. Sir A. Chance relinquishes his commission and retains the rank of Colonel.

ROYAL ARMY MEDICAL CORPS.

Lieut.-Col. B. Forde is placed on retired pay.

The undermentioned Lieutenant-Colonels retire on retired pay: S. J. C. P. Perry, W. L. Baker, J. G. Churton, T. Biggam, H. A. Davidson.

Major N. D. Walker to be temporary Lieutenant-Colonel whilst specially employed.

The undermentioned relinquish the acting rank of Lieutenant-Colonel: Majors T. J. Potter and P. C. T. Davy; Capt. C. H. K. Smith.

Major M. P. Leahy is placed on retired pay on account of ill-health caused by wounds.

The undermentioned relinquish the acting rank of Major: Capt. A. E. Richmond; Temp. Capts. C. D. Faulkner, B. Knowles, O. R. L. Wilson, J. R. Griffith, D. Fisher.

Capt. W. T. Hare resigns his commission and is granted the rank of Major.

A. L. Aymer, late Captain, R.A.M.C., to be Captain.

Lieutenants (temporary Captains) to be Captains: G. H. Barry, M. McG. Russell, F. G. L. Dawson.

To be temporary Captains: G. Cock, late temporary Captain; E. S. Joske, late Captain, A.A.M. Corps; H. Bell, late Can. A.M.C.

Officers relinquishing their commission:—Temp. Majors retaining the rank of Major: W. S. Haughton, H. E. L. Canney. Temp. Capt. J. E. Ainsley, on transfer to the Indian Medical Service. Temp. Captains granted the rank of Major: H. N. Webber, S. E. Picken, N. E. Kendall, C. C. de B. Daly, R. Massie, J. H. Peek. Temp. Captains retaining the rank of Captain: J. S. K. Smith, S. W. H. Stuart, A. F. Sanderson, V. D. Pennefather, F. Shearar, G. B. Buckley, A. P. Mitchell, A. H. Holmes, J. F. O'Mahoney, R. G. Higgen, G. H. Winch, R. L. Hughes, C. R. Macleod, C. C. Brewis, A. Hines, S. Broderick, H. Hannigan, D. F. Brown, L. W. Evans, R. C. Poyser, R. B. Johnson, T. J. Cobbe, B. C. Haller, E. D. S. Heyliger, P. Black, W. Forsyth, W. N. H. Bell, D. J. Bedford, J. S. Williamson, J. Lascelles, T. D. Miller, J. L. Meynell, H. W. Hues, R. Hodson, E. G. B. Carpenter, E. R. Holborow, J. J. Robertson, W. S. I. Robertson, M. Dockrell, C. L. Spackman, J. H. Marshall, W. G. Hopkins, T. R. Fulton, S. W. Milner, A. C. Meek, J. M. Anderson, D. O. Richards, H. S. Stockton, T. G. Elsworth, H. G. Parker, T. B. Vaile, W. J. F. Symons, N. B. Laughton, C. C. Okell.

SPECIAL RESERVE OF OFFICERS.

Capt. C. Nicholson relinquishes the acting rank of Major.

Capts. J. P. Charnock (granted the rank of Major), P. F. A. Grant, F. Griffith, L. K. Ledger, G. R. McRobert, E. W. Mann relinquish their commission.

TERRITORIAL FORCE.

The undermentioned officers to be Lieutenant-Colonels and to command the Field Ambulance: Majors J. M. G. Bremner (2nd East Anglian), D. Rorie (Bt. Lieut.-Col.) (2nd Highland), E. B. Bird (Bt. Lieut.-Col.) (3rd Wessex), A. E. Kidd (3rd Highland), A. Callam (2nd East Lancashire), E. H. Cox (3rd East Lancashire), J. W. Leitch (1st Lowland), J. W. Keay (3rd Lowland), T. A. Barron (1st North Midland), D. L. Fisher (2nd Northumbrian), P. R. Ash (3rd Northumbrian), F. Whalley (2nd West Riding), T. Donovan (1st Welsh), C. L. Isaac (3rd Welsh); Capts. J. F. MacIntosh (1st Highland), A. T. Falwasser (1st Home Counties), H. G. G. Mackenzie (3rd Home Counties), C. S. Brebner (1st London), R. E. Bickerton (2nd London), R. M. Vick (3rd London), J. MacMillan (5th London), H. K. Dawson (6th London), J. F. Dixon (2nd North Midland), J. Miller (3rd North Midland), R. A. Broderick (2nd South Midland), T. A. Green (3rd South Midland), W. Lister (1st West Riding).

Major W. G. Mitchell is restored to the establishment.

Capt. F. R. Humphreys to be Major.

1st Western General Hospital: Capt. T. P. McMurray is restored to the establishment.

ROYAL AIR FORCE.

Medical Branch.—Lieut.-Col. G. N. Biggs (Major, R.A.M.C., T.F.) relinquishes his temporary R.A.F. commission on return to Army duty and is permitted to retain the rank of Lieutenant-Colonel.

Capt. C. E. Thwaites is transferred to the unemployed list.

Parliamentary Intelligence.

HOUSE OF LORDS.

WEDNESDAY, APRIL 28TH.

EXPERT INQUIRY ON SHELL SHOCK.

Lord SOUTHBOROUGH called attention to the different types of hysteria and traumatic neurosis, commonly called "shell shock," from which many soldiers suffered during the war, and referred to the death penalty inflicted upon men by courts-martial on the charge of "cowardice" (without inviting any reopening of the evidence in such painful cases); and moved that the Government should make inquiry either by a Select Committee of the House of Lords or by a Departmental Committee into the expert knowledge derived by the army medical authorities and the medical profession with the object of recording for use in time to come the experiences of the war, and to advise whether by military education or otherwise some scientific method of dealing with such cases could not be devised. He said this was a vast and complicated subject which must be approached with care and circumspection. The subject of shell shock could not be referred to with any pleasure. All would desire to forget it—to forget the cases, extraordinary and mysterious, with which we had been confronted; to forget the roll of insanity, suicide, and death; to bury our recollections of the horrible disorder; and to keep on the surface nothing, but cherish the memory of those who were the victims of the malignity. But they could not do this, because a great number of the cases of those who suffered from shell shock and its allied disorders were still upon our hands and deserved our sympathy and care.

The Identification of Shell Shock.

It was also our duty carefully to record all the knowledge and experience acquired by our medical and administrative authorities. He was inclined to think that the disorder now called "shell shock" must have occurred in some of the fierce and bloody battles of the past and that among its victims were many whose condition was never properly understood, and who suffered the penalty of death. He believed that he was right in saying that whatever might have been the diagnosis at the beginning of the war there was now a fairly general consensus of opinion here, in France, and in America, that they were cases of varying and differing types of hysteria or traumatic neurosis common and well known in civil life, well understood by medical practitioners, and frequently met with in railway and other violent accidents. If it was a fact that a true identification of the disorder was wanting in the early months of the war he feared that through inadvertence and want of knowledge dreadful things might have happened to unfortunate men who had in fact become irresponsible for their actions.

Shell Shock and Hysteria.

It was clearly not long, however, before our army medical authorities, in common with the French, fully realised the gravity of the disorder and appreciated that if one understood hysteria they were well on the way to understand "shell shock." This was all for the good, but it did not in fact lighten responsibility, for hysteria was a very serious and dangerous malady, and not only did it present itself in various forms and types, but it became in a sense contagious, because men became open to suggestion through expectation. And only too often such expectations were realised. If it might be assumed that "shell shock" was now recognised to be a type of hysteria differing but little from the traumatic psycho-neurosis observed in civil life, then it should be amenable to the same therapeutic measures both for prevention and cure. These and other matters relating to treatment offered an interesting field for inquiry, evidence, and records. There was evidence that "shell shock" or hysteria was not confined to the untrained soldier. This meant, no doubt, that in some cases after wear and tear the nervous system refused to do more. But it also meant that the seasoned soldier had probably suffered already from "shell shock," had been invalided, and then returned to the front. Was it not worth while to inquire whether, when a man had been badly damaged by "shell shock," it was safe either for himself or his colleagues to allow him to return to the fighting line? There were many thousands of cases of shell-shocked men discharged to pension or invalided out of the service. Some investigation, not of individual cases, but of classes of cases, might be expedient. In quasi-mental cases he could imagine no more miserable fate for a patient than a continued course of absolute idleness, and the health and condition of a large number of men doing nothing but draw their pension might be greatly improved by an organisation designed to give them a little work as a beginning. He feared there were a number of cases of mental type so severe that the hope of

the restoration of the mind had practically been abandoned. Were these to be permanently kept in homes, and was the treatment there the most desirable for them? Again, was it wise that various classes of the disorder should be mingled together? The real question in cases of dereliction of duty was whether there was loss of will-power. What power had the courts-martial to make inquiry into the condition of the man's mind? It was obvious that in cases of hysteria to ascertain truly the condition of the prisoner's mentality and will-power was of the first importance. He gathered that where a plea of insanity was entered at a court-martial the medical officers were not allowed to report generally on the prisoner's state of mind. The man, possibly one with a low order of mentality, might have entirely lost his wits on the day of the battle, and a few weeks later might have practically recovered. In recent years, through the humanity of the judges and the establishment of the Court of Appeal, the rules in McNaughton's case—the case of the murderer of Drummond, Sir Robert Peel's secretary—had been relaxed and the judges had approached the position that responsibility might be abrogated by loss of control if arising from mental disease or infirmity and not through the accused person's own conduct. But it would appear to be otherwise under military law, under which, if the defence of insanity was raised, it could only be resolved by a rigid application of the McNaughton rules.

Military and Civil Considerations.

Inquiry might fairly be made as to whether the military and the civil law should not be put upon the same footing. Was it possible, the noble lord asked, to prepare the minds of soldiers against the disasters of hysteria and neurosis? Dr. Morton Prince, a distinguished physician of Boston (Massachussetts), had given great attention to the subject at home, at the base, and in the hospitals of France and England. He was of opinion that it might be driven into a soldier's mind as part of his ordinary training that "shell shock" was a form of hysteria, due to his own thoughts and fears, and external suggestion arising from the condition of the modern battlefield, and that as long as he received no physical injury there was little danger to be apprehended from the disasetr. The efficiency of the army and of future armies might well be impaired by shell fear (as they called it in America), and it was worth considering whether some method of giving confidence by training and education might not be devised by a committee. Upon the committee of inquiry it would be important to have the best army medical representation that could be found, and he suggested that their lordships' House might be represented by Lord Dawson of Penn, until recently Sir Bertrand Dawson. Two representatives of the House of Commons would also be important. A naval medical officer might be put on the committee, as the results of shell fighting at sea were distinctly different from those of shell fighting on shore.

Lord Horne's Views.

Lord HORNE, as a general officer who had commanded large forces in the field, cordially supported Lord Southborough's motion. He was convinced from his own personal experience that there was a tremendous field of research open to any committee established with the object referred to by the noble lord. In the later part of the war if there was the shadow of a suspicion that a man's crime might have been caused by any of the forms of hysteria which were included under the term "shell shock" he could confidently state that the sentence was not confirmed until the accused had been under the observation of medical authorities or detained for a time at one of the detention establishments and given every opportunity of allowing those in authority to arrive at a decision, whether his mental balance had in any way been affected or not. He was much struck by the suggestion that an inquiry by a competent committee might lead to some form of mental exercise that would enable them to train soldiers to endure the nerve-shattering conditions which led to this form of "shell shock." Personally, he thought it was extremely probable that some methods might be devised which would lead to that end. But the term "shell shock" should not occupy people's minds too much, because many of those whose mental balance gave way during the war did not lose their self-control from anything to do with a shell, but from the general effects of extreme tension on a highly organised nervous system. It was those, possibly, of the lower mentality and lower organisation; those whom nature had endowed with a more easy-going temperament, who were less likely to suffer from any form of "shell shock." Fear, after all, was met by whatever effort was necessary to control the nerves. Under the novel conditions of a modern battlefield there was no man who did not suffer from fright. The man who got through was the man who retained the power of controlling his nerves.

The Need for Special Medical Advice.

Viscount HALDANE said he agreed with the grounds stated by Lord Southborough, but he was not quite sure that the remedy he proposed by his motion was right. It was now known that want of mental control was in a good many cases the result of an actual physical cause. For instance, the shock of an explosion might physically inhibit the action of the nerves which controlled breathing; the supply of oxygen to the blood, and therefore to the brain, might be impaired. The result was that the individual was for the time being, and perhaps for some time after, a different personality. There was much more than a question for the ordinary experts. All that could be done, he thought, was to collect the very valuable body of evidence which had been got together lately. There were investigations at the Taplow Hospital, under the direction of the War Office, which were of the utmost value, and others had been going on all over the country. He agreed that the matter required the closest investigation. It had too often, however, been the custom because a man was a very eminent medical man to ask him to investigate a branch of a very great science which had ramifications with which he was not familiar. In a matter of this kind they ought to get together a small body of picked men of the highest eminence in this particular branch of investigation. A small investigating committee of this kind brought together by the War Office, could, roughly, at all events, lay down certain standards.

Expert Inquiry Granted.

Viscount PEEL (Under Secretary for War), replying for the Government, said that the instructions to courts-martial during the war were that where the soldier in his defence or in mitigation of punishment urged a substantial plea on medical grounds a medical witness was invariably to be called either to substantiate or rebut the case before the finding, if it was in defence, and afterwards, if it was urged in mitigation of punishment. In practice the court adjourned and a medical board was held; and on the adjourned hearing one or more members of the board would be called to give evidence as to the facts observed and their conclusions on these facts. A mental specialist was always included if their was any suggestion of "shell shock" or any other kind of mental or nervous derangement. A medical board was always held before any action was taken to confirm a death sentence. The number of cases in which such sentences were carried out was exceedingly small. For cowardice 18 death sentences were carried out and 266 for desertion. The total number of death sentences carried out was 343, whereas the total number of such sentences passed on officers and men was 3076. As regards the request for an inquiry, the view of the Government was that great advantages might be obtained from such an investigation. Many of the nervous and mental conditions encountered were entirely new to many of the medical officers concerned, and there had been a great many expressions in different medical journals of their individual views on the subject. It was thought that it would be of great value if these different views could be gathered together and thoroughly investigated by such a committee as had been suggested. The composition of the committee was a matter for consideration later. Besides experts in the particular subject, it might be considered whether from the discipline side a lawyer and a soldier might also be included.—The motion was agreed to.

HOUSE OF COMMONS.

WEDNESDAY, APRIL 28TH.

Indian Medical Service Pensions.

Colonel YATE asked the Secretary for India if he could now state what increase was to be made in the pensions of the widows, children, and dependents of deceased officers of the Indian Army, the Indian Medical Service, and the Royal Indian Marine.—Mr. MONTAGU replied: I am still awaiting the views of the Government of India. I have again impressed on them that the matter is urgent.

Contaminated and Infectious Stores.

Mr. JOHN DAVISON asked the Minister of Health whether he had received any resolutions of protest from the various trade-unions and other organisations in the district of Bow and Bromley strongly protesting against the dumping of infectious and contaminated surplus stores of Government war materials in that district, and demanding that all such stores deposited there should be destroyed at once and no further quantities allowed to be landed in this country as, in their opinion, this dumping was responsible for the outbreak of small-pox in that district; and whether he could state what action he proposed to take in the matter.—Dr. ADDISON replied: I have received a resolution of protest from the Bow and Bromley Local Labour Party in regard to this matter. The stores referred to are in course of removal, and it is expected that the removal will be completed by the end of next week. These stores will be thoroughly disinfected and deposited in premises which have been secured for this purpose outside London. The disinfection is being carried out under the supervision of one of the medical officers of the Ministry of Health. I am informed that no stores belonging to the Ministry of Shipping which are known to be infected are allowed to be placed in store until they have been adequately disinfected.

The Supply of Midwives.

Mr. BRIANT asked the Minister of Health if he would state the number of practising certified midwives in the United Kingdom and the approximate number required for the proper care of maternity cases; and what steps, if any, the Ministry proposed to take in order to secure that an adequate supply of midwives should be available.—Dr. ADDISON replied in a written answer: According to the last report of the Central Midwives Board the number of women entitled to practise as midwives on March 31st, 1919, was 44,166, but the number who gave notice of their intention to practise in 1918 was only 11,298. No useful estimate can be made of the total number of midwives required. The shortage which exists in some districts is due to the fact that the number of cases within reach is too small to enable a midwife practising independently to make a living. The Ministry have continued the policy of the Local Government Board of urging local authorities and nursing associations to subsidise midwifery in the more scattered districts and of paying grants in respect of such subsidies. By this means the proportion of the rural population served by trained midwives has increased since 1917 from 51 per cent. to 65 per cent., and steady progress is being made. Nearly all the county councils and county nursing associations have framed schemes for extending the midwifery service of their counties. A number of local authorities in urban areas have also, with the assistance of the Ministry, subsidised the provision of trained midwives in parts of their districts in need of this service. A grant in aid of the training of women as midwives has been authorised, and is being administered by the President of the Board of Education.

After-Care of Consumptives.

Major ENTWISTLE asked the Minister of Health whether his attention had been drawn to the report issued by the Kingston-upon-Hull Insurance Committee dealing with the administration of sanatorium benefit for the year ending Dec. 31st, 1919, in which it was pointed out that a large proportion of the number of persons who applied for sanatorium benefit died within a comparatively short period after treatment where such treatment was not followed up by effective after-care; whether he was aware of the striking improvement which had taken place in Hull since the establishment of an after-care committee; and, if so, whether it was the policy of the Minister in his scheme for combating tuberculosis that after-care would form an integral part thereof and receive liberal financial encouragement from Imperial sources.—Dr. ADDISON replied: The answer to the first three parts of the question is in the affirmative. As regards the last part, the financial arrangements in connexion with the scheme for combating tuberculosis are under consideration.

Diet and Clothing for Tuberculous Ex-soldiers.

Mr. RUPERT GWYNNE asked the Pensions Minister whether his attention had been drawn to the fact that it was not generally known among ex-Service men suffering from tuberculosis that they were entitled to extra diet allowance, and special bedding and clothing where necessary; and if he would give instructions to local War Pensions Committees to have this information more widely circulated.—Major TRYON replied: Inquiries which have been made do not support the suggestion contained in the question. Moreover, the conditions under which special diet and clothing can be provided are fully set out in the Local War Pensions Committee Handbook, copies of which have been supplied gratis to the headquarters of the various ex-Service men's associations. The handbook is now being placed on sale, and the local branches will thus be enabled to obtain copies for the information of their members.

Mr. RUPERT GWYNNE asked the Pensions Minister whether he could see his way to issue instructions for extra clothing and bedding to be given from time to time to all ex-Service men certified to be suffering from tuberculosis instead of providing it on loan in certain cases.—Major TRYON replied: Where open-air home treatment is ordered extra blankets which are certified to be necessary are supplied, but not on loan, nor is the cost recovered. Extra clothing is provided as an incident of treatment and not in supplementation of pension, but in certain cases men have expressed the wish to purchase clothing on the termination of treatment, and the question whether this would be practicable is being considered.

THURSDAY, APRIL 29TH.

Insanitary Pensions Offices at Hastings.

Mr. JOHN DAVISON asked the Pensions Ministry whether he had received any complaints from the staff of the Hastings War Pensions Committee and Medical Referees protesting against the insanitary condition of the offices occupied by that staff and committee; whether he was aware that the medical referees who had held examinations of disabled men in the building unanimously condemned it on account of the unhealthy atmosphere, and on some occasions refused on that account to examine men suffering from open wounds; that these premises were for some years occupied by a department of the Corporation, but that, in consequence of excessive absences through sickness of the members of their staff, the Corporation decided to vacate them; and whether, in view of the unsuitability of these premises as offices and their general unhygienic condition, he would make inquiries into the matter, with a view to securing accommodation in a more healthy situation.—Major TRYON replied: The answer to the first part of the question is in the affirmative. The suitability of the accommodation now in occupation by the Hastings War Pensions Committee has been under the consideration of the First Commissioner of Works, who is, I understand, endeavouring to secure other accommodation.

MONDAY, MAY 3RD.

Orthopædic Cases in Birmingham.

Mr. HALLAS asked the Minister of Health whether he was aware that the Discharged Soldiers' Committee of the Citizens' Committee of Birmingham was finding difficulty in dealing with orthopædic cases in consequence of the massage staff being too small; and whether he could provide the necessary relief.—Major TRYON (Parliamentary Secretary to the Ministry of Pensions) replied: There are a number of vacancies in the Ministry of Pensions Massage Service, but it is expected that these will shortly be filled. The necessary additions to the staff at Birmingham will be made as soon as possible.

Blind Members of Advisory Blind Committees.

Viscountess ASTOR asked the Minister of Health whether instructions had been issued to all local Advisory Blind Committees to have among their members one blind person elected as a representative of the blind in the committee's area; and whether, if a local committee failed to comply with these instructions, or, while appointing a blind representative, failed to summon him to meetings of the committee, any steps could be taken by the Minister to enforce his wishes on the local committee.—Dr. ADDISON replied: In reply to the first part of the question I gave instructions, on the advice of the Central Advisory Committee, that wherever practicable vacancies occurring in these local committees should be filled by blind persons until at least one-third of the committee (excluding representatives from local authorities) were blind persons, and this proportion has not been reached in nearly all cases. As regards the latter part of the question, the final appointment of members rests with me, and if the honourable Member will furnish me with particulars of any case in which a person so appointed has not been summoned to meetings I will have this matter looked into and dealt with.

TUESDAY, MAY 4TH.

Foreign Service Roster for Medical Officers.

Lieutenant-Colonel BUCKLEY asked the Secretary for War and Air if he would state what method of selection was adopted in detailing Royal Army Medical Corps officers for duty in India; whether a roster of previous service at home was maintained; and whether consideration was given to service in the theatres of war in detailing officers for India.—Sir A. WILLIAMSON (Financial Secretary to the War Office) replied: A foreign service roster for officers of the Royal Army Medical Corps is kept. Officers are detailed for service in garrisons overseas in accordance with this roster, except in the case of any officer who, on account of special qualifications which he may possess, is required for special duty in the United Kingdom. When an officer who has completed a tour of service in India again becomes due for foreign service every endeavour is made to post him to a colony, but this must necessarily depend on the demands for reinforcements and numbers of officers available. With regard to the last part of the question, due consideration is given to service in theatres of war other than France and Italy.

Medical Men on Sessional Engagements.

Mr. ROBERT YOUNG asked the Pensions Minister if he would state the number of pensioned retired regular naval and military medical men employed by the Ministry on a sessional basis besides those employed at a salary; how many sessions could be put in in a day; whether this was often the most lucrative method of payment for the aforesaid medical men; and whether, on account of the shortage of work, many demobilised civilian doctors were only getting three or four sessions per week which in many cases represented their whole income.—Major TRYON replied: The number of retired regular officers employed by the Ministry on a sessional basis who are drawing pensions is 152, being 5 per cent. of the total number of medical men so employed. The maximum number of sessions is 11 per week, but owing to the number of medical men available for the work the average number of sessions per week which can be given to each man is considerably less.

Dangerous Drugs Bill.

Mr. SHORTT (Home Secretary) introduced a Bill to regulate the importation, exportation, manufacture, sale and use of opium and other dangerous drugs, which was read a first time.

Medical News.

UNIVERSITY OF CAMBRIDGE.—At examinations for medical and surgical degrees held in Easter term the following candidates were successful:—

Part II., Pharmacology and General Pathology.—J. C. Ainsworth Davis, Christ's; L. W. Batten, Sidney Sussex; P. J. Briggs, Christ's; E. B. Brooke, Caius; A. W. Brown, Emmanuel; G. H. Caiger, Caius; M. T. Clegg, Jesus; J. R. A. Davies, Clare; J. G. Drew and G. E. Dyas, Caius; F. W. Furniss, Downing; H. J. H. Hendley, Caius; R. A. Highmoor, Clare; F. D. Howitt, Trinity; J. D. Legge Currie, Clare; W. B. A. Lewis, Christ's; G. S. Lund, St. John's; T. K. Maclachlan, Pembroke; F. H. Mather, Sidney Sussex; S. M. Milner, King's; O. G. Misquith, Christ's; R. W. Nichol, Caius; C. C. Okell, St. John's; C. P. Oliver, Caius; P. Richardson, Christ's; F. W. Roques, Clare; D. G. Sharp, Christ's; T. H. Sims, Pembroke; L. V. Snowman, Downing; C. G. Taylor, non-collegiate; R. H. White, King's; L. C. Whitworth, Downing; and R. N. P. Wilson, Pembroke.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.—An ordinary Comitia of the Royal College of Physicians of London was held on April 29th, the President, Sir Norman Moore, being in the chair.—The President announced the appointment of Professor C. S. Sherrington as the representative of the College on the committee being formed to consider a memorial to the late Professor Sir William Osler. —The following were admitted to the *Membership* after having passed the required examinations: Dr. R. A. Bennett, Dr. F. B. Chavasse, Dr. T. F. Cotton, Dr. J. A. Drake, Dr. A. W. M. Ellis, Dr. F. R. Fraser, Dr. J. Gatt, Dr. Mary E. Harding, Dr. H. W. Hills, Dr. G. J. Langley, Dr. E. L. W. Mandel, Dr. E. Mapother, Dr. H. B. Russell, Dr. Evelyn D. Scott, Dr. H. S. Stannus, Dr. Margaret G. Thackrah, and Dr. R. H. Wilshaw Licences to practise physic were granted to 70 candidates who had passed the necessary examinations and conformed to the by-laws and regulations.—The following were elected to the *Fellowship* on the nomination of the Council: Dr. W. F. Menzies, Dr. J. G. Forbes, Dr. W. M. Robson, Dr. S. E. Dore, Dr. G. B. Price, Dr. E. L. Holland, Dr. A. Ramsbottom, Dr. A. S. Woodwark, Dr. F. G. Crookshank, Dr. A. C. D. Firth, Dr. N. Mutch, Dr. F. M. R. Walshe, Dr. G. Graham, and Dr. G. E. Beaumont.—The resignation of his membership by Dr. J. W. Springthorpe was accepted.—Dr. John Fawcett and Sir Wilmot Herringham were appointed as representatives of the College on the Senate of the University of London in place of Dr. Sidney Martin and Sir Seymour Sharkey, resigned.

ROYAL COLLEGES OF PHYSICIANS OF LONDON AND SURGEONS OF ENGLAND.—At the Final Examination of the Conjoint Board, held from April 6th to 22nd, the following candidates were approved in the undermentioned subjects:—

Medicine.—A. N. Aitken, Rush Med. Coll.; Kathleen Ardell, Royal Free; M. Bharatan, Madras; S. Blackman, London; J. H. Blair, Queen's Univ.; A. B. Bratton, Cambridge and London; C. H. Bulcock, St. Bart.'s; Joan Katherine Somerville Cave, Royal Free; G. W. Cheater, Charing Cross; H. R. Chibber, Liverpool; Florence Edith Coombes, Royal Free; P. Couacoud, Guy's; F. C. Cozens, Cambridge and St. Bart.'s; F. W. Crook, Guy's; H. A. Crowther, Cambridge and Guy's; K. V. Deakin, Manchester; M. A. Distaso, Bristol and Cardiff; W. D. Doherty, Cambridge and Guy's; T. A. J. Duff, Toronto; Georgiana May Duthie, Manchester; J. H. France, Westminster; Blanche Sutton Gardner, Royal Free; A. G. D. Gavin, Cambridge and St. Thomas's; A. D. Gill, Birmingham; C. I. C. Gill, Cambridge and Guy's; G. E. Hayward, Manchester; F. Heber, London; Florence Janetta Humphreys, Westminster; Ruby Inkster, Univ. Coll.; H. V. Jackson, Bristol; Doris Eleanor Parker Jolly, King's Coll.; S. G. Jones and T. M. Jones, Liverpool; T. T. Jones, Manchester; Dorothy Maud Kemp, Royal Free; Doris Gertrude Knowles, St. George's; J. N. Laing, Manchester and St. Bart.'s; A. Leigh, Manchester; Mary Alice McHugh, Liverpool; L. B. Maxwell, St. Thomas's; G. S. Mitchell, Westminster; Annie Agnes Muir, Liverpool; B. Nanavati, Bombay and London; M. Nurick, London; Marjorie Pierce, Royal Free; Mary Colegrave Prideaux, St. Mary's; M. H. Renall, St. Bart.'s; Edith Mary Seward, Liverpool; J. V. Sparks, Cambridge and St. Bart.'s; P. Steinberg, London; C. J. Thomas, St. Thomas's; F. A. van Coller, Manchester; Nellie Wall, Liverpool; Helena Jane Webster, Westminster; A. D. Whitelaw, St. Thomas's; Dorothea Compston Wigfield, Royal Free; and F. B. Yonge, Middlesex.

Midwifery.—A. H. Abdel-Messih and N. Abdoh, Manchester; A. N. Aitkin, Rush Med. Coll.; F. Allen, Cambridge and St. Bart.'s; S. E. Amos, St. Thomas's; H. N. Andrews, St. Bart.'s; D. E. Bedford, Middlesex; Margaret Gladys Best, St. Mary's; G. C. Bhatia, Liverpool; S. Blackman, London; I. Blain, Manchester; J. L. M. Brown, St. Bart.'s; L. C. F. Chevens, St. Thomas's; G. H. A. P. Clavier, London; Florence Edith Coombes, Royal Free; G. R. H. Cooper, Birmingham; C. L. Cottle, Glasgow; J. W. Crawshaw, Manchester; E. J. Crisp, Guy's; C. K. Cullen, London; G. L. J. A. de Rynck, Univ. Coll.; I. G. de Zilva, Madras; R. F. Divecha, London; W. D. Doherty, Cambridge and Guy's; A. C. d'Souza, Manchester; A. Duffy, Manchester; F. H. Edwards, Liverpool; W. C. Elson, Leeds; S. Farris and J. Flanagan, Liverpool; E. C. H. Foreman, Univ. Coll.; Ada Marion Freeman, King's Coll.; O. P. Gallegos, Charing Cross; Blanche Sutton Gardner, Royal Free; Evelyn Alice Garnett, Manchester; Madeline Giles, St. Mary's; A. D. Gill, Birmingham; C. I. C. Gill, Cambridge and Guy's; B. Gould, London; F. R. Hall, St. Thomas's; H. W. Hammond, St. Bart.'s; Gertrude Eleanor Harre, St. Mary's; S. E. Harvey, St. Thomas's; S. S. Hewitt, St. Mary's; Sylvia Kema Hickson, Manchester; J. T. S. Hoey, Oxford and St. Thomas's; H. V. Jackson, Bristol; Marjorie Mary Jefferson, Manchester; T. M. Jones, Liverpool; M. H. K. Kane, Univ. Coll.; Dorothy Maud Kemp, Royal Free; A. N. Kingsbury, Middlesex; Margaret Hypatia Kingsford, London; G. Kinneir, St. Bart.'s; F. Knoyle, Middlesex; C. A. Lindup, Univ. Coll.; E. T. Lloyd, Guy's; J. R. Lund, St. Thomas's; Mary Alice McHugh, Liverpool; H. McKenzie, London; F. S. Maclean, Middlesex; C. L. Mason, St. Mary's; P. S. Menon, Edinburgh; B. Nanavati, Bombay and London; Sybil Mary Nuttall, St. Mary's; W. A. O'Connor, Oxford and Birmingham; D. J. P. O'Meara, Guy's; T. D. Overend, Oxford and Univ. Coll.; R. Y. Paton; Cambridge and St. Mary's; A. S. Pearson, Birmingham; Ruth Wade Plimsoll, Royal Free and St. Mary's; A. D. Porter, King's Coll.; M. R. Rana, Bombay; O. A. L. Roberts, St. Mary's; L. C. Rogers, Middlesex; G. R. A. de M. Rudolf, King's Coll.; A. Salgar, Paris; W. F. Skaife, St. Bart.'s; Constance Snowdon, Manchester; F. V. Squires, St. Thomas's; H. E. Suter, St. Mary's; K. H. Tallerman, Cambridge and St. Thomas's; Doris Adeline Taylor, Manchester; L. J. Timings, Birmingham; H. Tomlinson, Manchester; H. M. Toop, London; Edith Helen Trimmer, St. George's; F. I. G. Tweedie, Cambridge and St. Thomas's; J. F. Weakley, Univ. Coll.; C. H. Whittle, Cambridge and King's Coll.; E. A. Widdowson, Otago; Dorothea Compston Wigfield, Royal Free; and Greta Isabel Yeoman, St. Mary's.

Surgery.—J. H. Blair, Queen's Univ.; B. L. Collins, St. George's and King's Coll.; J. W. Crawshaw, Manchester; Georgiana May Duthie, Manchester and King's Coll.; W. C. Elson, Leeds; J. Flanagan, Liverpool; M. Garfield, Univ. Coll.; F. R. Hall, St. Thomas's; Doris G. Knowles, St. George's; F. S. Maclean, Cambridge and Middlesex; R. A. Madgwick, London; Dorah Mason, Royal Free and St. Mary's; C. W. Narbeth, St. Bart.'s; D. J. P. O'Meara, Guy's; C. L. Pasricha, Cambridge and St. Bart.'s; R. Y. Paton, Cambridge and St. Mary's; J. J. Redelinghuys, Univ. Coll.; H. L. Sackett, St. Bart.'s; A. D. Stoute, Boston and Westminster; C. J. A. Tjon-A-Man, Middlesex; H. Tomlinson, Manchester; F. A. van Coller, Manchester; N. S. B. Vintner, St. Bart.'s; and W. C. S. Wood, King's Coll.

LONDON SCHOOL OF TROPICAL MEDICINE.—The following candidates passed the examination held at the termination of the sixty-second session (February–April, 1920):—

*H. E. Whittingham (Duncan Medal), *A. K. Cosgrave, *A. Khalik, *E. J. Wood, *E. Forrester-Paton, J. Fanstone, E. G. Mack, W. P. Hogg, J. S. Armstrong, J. R. C. Stephens, M. Wong, G. A. S. Madgwick, G. A. Frendo, C. Basile, M. Jackson, E. U. MacWilliam, N. Nedergaard, H. R. Dive, J. S. Crolius, J. Gray, A. Y. Cantin, D. Sohokman, and C. H. Brangwin.

* With distinction.

ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH.— The George Alexander Gibson Memorial lecture will be delivered in two parts in the hall of the College on May 10th and 12th, at 5 P.M. each day, by Dr. William Russell. The subject chosen is the Sphygmomanometer in Practical Medicine. The first lecture will deal with the problem and the second with illustrations and interpretations.

UNIVERSITY OF LONDON: UNIVERSITY COLLEGE.— A public lecture on Greek Science and Modern Science: A Comparison and a Contrast, will be delivered at 5.30 P.M. on May 12th by Dr. Charles Singer, Sir Robert Hadfield in the chair.

THE University of Oxford has received an offer from Mr. Edward Whitley of £10,000 towards the endowment of a Professorship of Biochemistry, and a donation of £5000 from the British Dyestuffs Corporation, Ltd., towards the cost of extending the organic chemical laboratory.

UNIVERSITY OF BIRMINGHAM.—A course of post- graduate instruction is being given in the Medical Faculty, Edmund-street, and at the associated hospitals, beginning July 5th to 17th. The course will comprise sections of medicine, surgery, pathology and bacteriology, obstetrics and gynæcology, diseases of children, ophthalmology, diseases of ear and throat, radiology, electrical treatment, anatomy, and physiology. The fee for admission to the lectures and clinical demonstrations in each section is 1 guinea. Further particulars from the clerk to the Clinical Board, University, Edmund-street, Birmingham.

UNIVERSITY OF MANCHESTER APPEAL.—Another novel proposal in connexion with this appeal has been launched by the council of the University, who have decided that for every £5000 subscribed a free studentship shall be created, so that every private donor, town, district, or trade union subscribing this amount shall have the right to nominate a free scholar at the University. The importance of the step is that the new Education Act provides for the education of every boy and girl in the country up to matriculation standard, and if this decision of the University of Manchester is carried to its logical conclusion the endowment of free university education is accomplished and an undoubted step taken towards the democratisation of the University.

INDIAN MEDICAL SERVICE DINNER.—**The annual** dinner of the Indian Medical Service will be held at the Trocadero on Tuesday, June 8th, at 7.45 P.M., Major-General G. F. A. Harris, C.S.I., in the chair. Tickets and all particulars may be obtained from the joint honorary secretary, Colonel J. J. Pratt, I.M.S. (retd.), 63, Addison-road, London, W. 14.

MEDICAL SOCIETY OF LONDON.—**The Annual** Oration will be given at 11, Chandos-street, Cavendish-square, London, W., on Monday, May 10th, at 9 P.M., by Lieutenant-Colonel Sir D'Arcy Power, on the Rev. John Ward and Medicine. The President, Mr. V. Warren Low, will hold a reception at 8.30 P.M., and during the evening will present the Fothergillian gold medal to Sir Leonard Rogers.

ST. THOMAS'S HOSPITAL: POST-GRADUATE INSTRUCTION IN VENEREAL DISEASES.—A course of instruction in venereal diseases is being given on Thursdays, at 3 P.M., commencing May 20th, and lasting for 12 weeks. Colonel L. W. Harrison will lecture on the Principles of Diagnosis and Treatment, and practical instruction will include the examination of patients, microscopical work, and the administration of anti-syphilitic remedies, on a specified day in each week to be arranged. Further particulars from the Medical Secretary, St. Thomas's Hospital, London, S.E. 1.

SMALL-POX IN LONDON.—**Some of the small-pox** cases which have occurred in and around London during the past few weeks having remained undiscovered for a considerable time after the onset, the London County Council calls attention to the arrangements under which in doubtful cases the certifying practitioner confers with the medical officer of health of his borough. Should a further opinion be required, on application to the Public Health Department, at 2, Savoy-hill, London, W.C. 2 (Tel. No. Gerrard 3641), the services of Dr. W. McC. Wanklyn will be available.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY DINNER.—At a dinner of the West London Medico-Chirurgical Society, held in the Wharncliffe Rooms on April 29th, the society's triennial gold medal was presented to Mr. G. E. Gask, the other proposed recipient, Dr. T. R. Elliott, being unavoidably absent. Mr. Herbert Chambers, the President, was in the chair, and a distinguished gathering included Dr. Phineas Abraham, the founder of the medal. The toast of "The Imperial Forces," coupled with the names of Sir Robert Hill and Sir John Goodwin, was proposed by Sir Robert Armstrong-Jones. Summing up the benefits to laymen from the medical research and practice of the war, he spoke of the advance in the surgery of the brain, pleural cavity, fractures of the thigh and face, and of the importance of the Carrel-Dakin methods; he alluded also to the treatment without certification of nervous and mental diseases and psycho-neuroses. All this work had been made possible by the helpful coöperation of the administrative heads of the medical departments. In their replies both Directors-General spoke with appreciation of the services of the civil profession in the war and of the important work done at the West London Hospital post-graduate courses, Sir John Goodwin testifying to the great help which he had himself received there. The toast of "The West London Medico-Chirurgical Society" was proposed by Sir William Hale-White, who in an interesting reminiscent speech recalled the work of eminent medical men connected with the society, including Sir William Jenner, Sir James Paget, and Sir William Osler. In reply, Mr. Herbert Chambers referred to the labours of the late Charles Keetley in founding the society. This was the fourth occasion, he said, on which the triennial medals founded for special heroism in the field or distinguished services to medical science had been given. The selection committee, with the coöperation of Sir Humphry Rolleston and Sir Anthony Bowlby, had decided to give the medal this year for some achievement arising out of the war in the cause of medical science. A remarkable advance in the surgery of gunshot wounds of the thorax, due to the pioneer work of Dr. Elliott, had enabled Mr. Gask, who was the first member of the society to receive the medal, to perform a brilliant operation. Mr. Gask thanked the donors for the honour conferred upon him, but deprecated praise accorded to Dr. Elliott and himself to the exclusion of others. The work was the outcome of the labours of a variety of men in the British as well as in the French army, and was dependent also on the harmonious coöperation between physicians and surgeons. Particularly credit was due to Dr. K. D. Wilkinson, as well as to the help given by the administrative departments. The toast of "Kindred Societies and Guests" was proposed by the Mayor of Kensington (Dr. A. J. Rice-Oxley), Mr. V. Warren Low (President of the Medical Society of London) and Dr. Leonard Williams responding, and a pleasant evening was brought to a close by a vote of thanks to the chairman proposed by Sir D'Arcy Power.

ABERDEEN UNIVERSITY CLUB.—**The half-yearly** dinner is to be held at the Criterion Restaurant on Thursday, May 20th, at 7.30 P.M., preceded by the annual general meeting (6.30 P.M.). All communications should be addressed to Dr. W. A. Milligan, 11, Upper Brook-street, W.1, who will be pleased to receive names of intending members.

THE **Congrès Français d'Oto-Rhino-Laryngologie** will be held in Paris next week from May 10th to 13th, and a large number of British specialists are going to the meeting. For the meeting of the Royal Institute of Public Health in Brussels the hotels are already largely engaged from May 20th to 24th.

PHYSIOLOGICAL CONGRESS AT PARIS.—**This Con**gress, which met at Groningen in the year before the war, had fixed on Paris as the place for its next meeting, and had nominated Professor Charles Richet, Professor of Physiology in the University of Paris, as its president. Not till this year, however, has it been possible for a meeting to be held, and it will take place from July 16th to 20th at Paris, Professor E. Gley (Sorbonne, 1, Rue Victor Cousin) is the secretary; the subscription has been fixed at 35 francs, and a list of hotels available for members has been issued, the prices of a *lit* varying from 6–9 to 20–30 francs.

NATIONAL COUNCIL FOR COMBATING VENEREAL DISEASES.—Lord Sydenham having notified the Executive Committee of the Council that he would soon have to tender his resignation, Lord Gorrell has been nominated as his successor, while as a mark of recognition of Lord Sydenham's services it is proposed to entertain him at a farewell dinner.

VENEREAL PREVENTION IN PORTSMOUTH.—**The** Borough Council has adopted the recommendation of its Health and Housing Committee to take steps to spread among the male population of the borough a knowledge of the means of self-disinfection as indicated in Dr. A. Mearns Fraser's report. Before the sitting was held at which this decision was taken a representative gathering of many interests met at the mayor's invitation to hear Dr. Fraser expound his scheme. In the ensuing discussion the consensus of opinion appeared in favour of the municipality popularising the means of self-disinfection, although no formal vote was taken. At the same time a number of voluntary agencies agreed to take the opportunity of a simultaneous "chastity campaign."

THE UNIVERSITY COLSTON SOCIETY, BRISTOL.—**The** society's annual dinner will be held shortly, when the guest of the evening will be Lord Moulton. Alderman Frank Sheppard has accepted the office of President for 1921. The Bishop of Bristol, who is this year's President of the Colston Society, has issued an appeal for funds for research. No collection has been made since 1917, when only £275 was raised, and it is hoped that the Bishop's appeal will bring in a far larger collection than has ever been amassed before.

THE LATE DR. W. K. FYFFE, OF WELLINGTON, N.Z. —William Kington Fyffe, B.A., M.B. Camb., M.R.C.P. Lond., who died on April 23rd at Wellington after an operation, was eldest son of the late Deputy Surgeon-General W. J. Fyffe. He studied at Cambridge and St. George's Hospital, London, where he became house physician and medical registrar, and he was for a time assistant physician and pathologist to the Victoria Park Chest Hospital. During the war he served as medical officer with the 4th New Zealand contingent at Gallipoli.

A MEDICAL AID SOCIETY IN SOUTH WALES.—**The** employees of the Windsor Colliery at Abertridwr desire to alter the present arrangements for colliery medical service. They desire to become a registered society for providing medical aid. The proposed society would engage whole-time doctors to provide medical attendance. It would also embrace in its scope of activities the providing of drugs, hospital and nursing benefits, expert treatment by specialists when needed, special nourishment, optical and dental treatment, artificial limbs and surgical appliances and spectacles at cost price. Three medical officers are now asked for, a chief officer to live at Abertridwr and to receive £1000 per annum, with, in addition, a house, coal, light, and expenses in connexion with his duties, such as a motor conveyance; a second to live at Caerphilly and receive £800, with extras, as above; and a third at Senghenydd, at a salary of £700, with the same extras. Medical attendance on the families of the workers appears to be required as well as on the miners, of whom there are rather less than 2000 at this colliery; and since each worker would have on the average three dependents, the total population to be served by the three medical officers would be about 8000. The society is to be managed by a committee of nine underground workers, five surface workers, and three officials. No suggestion appears that any profit would be made by the society or that the services of the medical officers would in any way be exploited for gain, but professional difficulties may be anticipated in regard to working the scheme.

ROYAL MEDICAL BENEVOLENT FUND.—At the last meeting of the Committee, held on Tuesday, April 13th, 27 cases were considered, and £374 9s. voted to 24 of the applicants. The following is a summary of some of the cases relieved:—

Widow, aged 34, of M.B. Edin. who practised in N. Nigeria and with the Booth Line and died in December, 1919. Was left entirely unprovided for, her only income being £30 from investments, and she has a child, aged 4 months, which at present she cannot leave to earn her own living. Pays £2 2s. a week for board and lodging. Voted £18 in two instalments.—Widow, aged 38, of M.R.C.S. Eng. who practised at Newcastle, Staffs., and died in February, 1920. Was left with four children, ages 4 to 1 year, and has no income whatever. At present the guardians are allowing her to live in the resident medical officer's house, where she lived previously. Voted £18 in two instalments.—Widow, aged 43, of L.S.A. Lond. who practised at Bolton-on-Dearne, and died in October, 1919. Only income £70 from investments. Has four children, the eldest girl, aged 16, training as a shorthand typist; the younger children at school. Cannot manage owing to the high cost of living. Voted £18 in 12 instalments, and a special grant of £10.—Daughter, aged 60, of M.R.C.S. Eng. who practised at Battle, Sussex, and died in 1873. She has no income, and lives with her sister, who lets rooms when possible. Suffers from chronic rheumatism. Relieved 35 times, £290. Voted £18 in 12 instalments.—Daughter, aged 58, of M.R.C.S. Eng. who practised at Newport, Mon., and died in 1892. Was left totally unprovided for, and her only income is £21 from another charity. Pays 7s. 6d. a week rent. Suffers from ill-health. Cannot manage owing to the high cost of living. Relieved nine times, £117. Voted £18 in 12 instalments.—Widow, aged 36, of M.R.C.S. Eng. who practised at Witney and died in 1918. She receives £300 from investments, but she pays £75 in rent. She has three children, ages 12, 10, and 9, all at school, and she requires clothes for the children. Relieved twice, £10. Voted £2, and the case referred to the Guild.—Widow, aged 58, of M.R.C.S. Eng. who practised in Devonshire and died in 1914. Was left entirely without means, with one daughter, now aged 26, who is a children's nurse. Applicant has been earning £30 a year as a housekeeper, but is now ill and out of employment. Staying with friends. Relieved seven times, £64. Voted £18 in 12 instalments.—M.R.C.S. Eng., aged 83, widower, who practised at Hastings. Only income a pension of £100. Suffers from ill-health. Has one daughter, who looks after applicant. Rent and rates £39, part of which is paid by friends. Relieved once, £26. Voted £26 in 12 instalments.—Widow, aged 65, of M.B. Glag. who practised at Birkenhead and died in 1885. She receives £20 from another charity and £15 from a lodger. Does occasional needlework. Has three children who help all they can. Suffers from neuritis and heart trouble. Rent and rates £30. Cannot manage owing to the high cost of living. Relieved ten times, £120. Voted £12 in 12 instalments.—Daughter, aged 52, of M.R.C.S. Eng. who practised in Bombay and died in 1873. Has taken charge of a mental case for 14 years, for which she receives £1 a week. Rent and rates £16 a year. The high cost of living makes it impossible for her to manage. Relieved eight times, £93. Voted £18 in 12 instalments.

Subscriptions may be sent to the honorary treasurer, Sir Charters Symonds, at 11, Chandos-street, Cavendish-square, London, W.1.

LIVERPOOL MEDICAL INSTITUTION.—At a meeting of the Pathological Section of this society held on April 15th, Dr. J. F. Gemmell, the President, in the chair, Mr. F. C. Lewis read a note on the Standardisation of the Blood-cell Suspension in Complement-fixation Tests. He demonstrated his thesis in vitro, and laid emphasis on the fact that different workers used suspensions of different strengths; and further, that the method generally adopted for making the suspension led to irregularities in the strength. It was suggested that variations in the result of Wassermann tests applied to the same serum could, other factors being equal, be explained on the assumption of a variable minimum hæmolytic dose of complement. A plea was made for the use of a uniform and gravimetric suspension in order to ensure that the term "minimum hæmolytic dose of complement" was common to all laboratories.—Mr. John T. Morrison contributed a short paper on Diseases of the Male Breast, with Special Reference to Chronic Mastitis. The general similarity to diseases of the female breast was pointed out and a brief description given of the malformations, acute inflammations, granulomata and neoplasms affecting the gland. The condition, unsatisfactorily termed "gynecomastia," was discussed in detail. Histological reports were very few in number, but none confirmed the suggestion that the condition was a true hypertrophy of mammary tissue. On the other hand, there was evidence that a slow, quiet inflammatory process was at work in most instances. In cases of frankly chronic inflammation, the breast, or a nodule within it, could be felt as a firm well-defined tender mass; axillary adenitis might be present, but suppuration was rare. Histologically there was an increased formation of fibrous tissue with sometimes, in addition, an increase in the number of ducts; inflammatory reaction was noted at this latter site. It was recommended that cases which did not react to rest and the application of heat should be excised and examined microscopically. The suggestion was made that the lactiferous ducts, or their accompanying lymphatics, were the path of entry of the causal factor. The paper was freely illustrated by lantern slides.

PROPOSED MEDICAL INSTITUTE IN NEWCASTLE.—The establishment of a medical institute and club for the North of England has been advanced a further stage. Of the £10,000 required for the purchase and equipment of a suitable building, £5000 was already promised by Dr. J. W. Smith, of Ryton, in memory of his son (see THE LANCET, 1919, i., 1098). The building is to include a library and rooms for meetings, a restaurant, billiard, smoking, and card rooms, and a few bedrooms for members are to be provided. The combination of the conveniences of a club with facilities for obtaining technical literature in a meeting place for doctors should prove popular, and the appeal of the committee for promises of membership for a period of five years at £2 2s. a year should receive a wide response. Medical men of the North of England are asked also to subscribe £10 each towards the initial expenses. The secretary of the committee is Dr. J. Don, 1, Grove-street, Newcastle-on-Tyne.

NATIONAL BABY WEEK COUNCIL.—The Council has issued a leaflet (No. 8) entitled "Notes for Speakers on Child Welfare, 1920," which should prove useful to those for whom it is intended. The leaflet includes notes on child mortality, on the requirements of healthy babyhood, widows' pensions, and on a few of the ways in which the ordinary lay citizen can promote the aims of the Council. The provision of reliable statistics in simple form will enable many busy speakers to be more concrete and definite in their statements without fear of inaccuracy, and should thus add greatly to the effect of their appeals.

A meeting of the Council will be held at Armitage Hall, 224, Great Portland-street, London, W., on Tuesday next, May 11th, at 3 P.M., Viscount Astor in the chair, when Dr. Eric Pritchard will present the executive committee's report and scheme for this year's campaign, and Dr. Helen Swatman will give an address on the Development of Infant Welfare and Antenatal Work in Rural Districts, to be followed by a discussion. Mrs. H. A. L. Fisher will speak on the Problem of the Unmarried Mother and her Child, and Mr. T. Vivian Rees on the Children's Era. The meeting will be open to non-members of the Council by ticket, which may be obtained free on application to the secretary at 27A, Cavendish-square, London, W.1.

Medical Diary.

SOCIETIES.

ROYAL SOCIETY, Burlington House, London, W.

THURSDAY, May 13th.—4 P.M., Demonstration:—Dr. A. D. Waller: The Apparent "Growth" of Plants (and of Inanimate Materials) and of their Apparent "Contractility."—Paper:—Mr. W. N. F. Woodland: On the "Renal Portal" System (Renal Venous Meshwork) and Kidney Excretion in Vertebrata (communicated by Prof. A. Keith).

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.

MEETINGS OF SECTIONS.

Monday, May 10th.

WAR (Hon. Secretaries—H. B. Hill, Oliver Robinson, J. McIntyre): at 5.30 P.M.
Annual General Meeting—Election of Officers and Council for 1920-1921.
Paper:
Surgeon-Captain Bassett-Smith, R.N.: Scurvy, with Special Reference to Prophylaxis in the Royal Navy.

Wednesday, May 12th.

SURGERY: SUB-SECTION OF PROCTOLOGY (Hon. Secretaries—W. Sampson Handley, Sir Gordon Watson): at 5.30 P.M.
Annual General Meeting—Election of Officers and Council for 1920-1921.

Thursday, May 13th.

NEUROLOGY (Hon. Secretaries—P. W. Saunders, George Riddoch): at 8.30 P.M.
Annual General Meeting—Election of Officers and Council for 1920-1921.
Paper:
Dr. S. A. Kinnier Wilson: On Decerebrate Rigidity in Man, and the Occurrence of Tonic Fits.

Friday, May 14th.

CLINICAL (Hon. Secretaries—T. P. Legg, S. A. K. Wilson): at 5.30 P.M.
Annual General Meeting—Election of Officers and Council for 1920-1921. *Cases* (at 5 P.M.).
Will members wishing to show cases kindly inform the Hon. Secretaries as soon as possible?

MEDICAL SOCIETY OF LONDON, 11, Chandos-street, Cavendish-square, W.

MONDAY, May 10th.—8 P.M., Annual Meeting. Election of Officers for 1920-21 Session. 9 P.M.: Annual Oration: Sir D'Arcy Power: The Rev. John Ward and Medicine. During the evening the Fothergillian Medal (1917) will be presented to Sir Leonard Rogers, M.D.

TUBERCULOSIS SOCIETY, at the Town Hall, Leeds.

THURSDAY, May 13th, AND FRIDAY.—Two-day Congress. There will be Sections dealing with—1. Tuberculosis and Child Life. 2. Tuberculosis Workshops and Workers. 3. Recent Advances in Treatment. 4. Farm Colony Work. 5. Sanatorium Dietary. 6. Care and After-Care. 7. Tuberculosis

and the Housing Problem. 8. Tuberculosis and the War. 9. Tuberculosis and the Training of the General Practitioner. 10. Artificial Pneumothorax.

SOCIETY OF TROPICAL MEDICINE AND HYGIENE, 11, Chandos-street, Cavendish-square, W.

FRIDAY, May 14th.—8.30 P.M., Paper:—Dr. E. J. Wood: A Consideration of Pellagra from the Standpoint of a "Deficiency Disease."

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH, in the Hall of the College, 9, Queen-street, Edinburgh.

MONDAY, May 10th, AND WEDNESDAY.—5 P.M., George Alexander Gibson Memorial Lecture:—Dr. W. Russell: The Sphygmomanometer in Practical Medicine. Lecture I., The Problem: Lecture II., Illustrations and Interpretations.

WEST LONDON POST-GRADUATE COLLEGE, West London Hospital, Hammersmith, W.

MONDAY, May 10th.—12.15 P.M., Dr. Burnford: Pathological Demonstration. 5 P.M., Mr. D. Armour: Cervical Ribs.

TUESDAY.—10 A.M., Dr. McDougal: Electrical Department. 5 P.M., Mr. T. Grey: Appendicitis.

WEDNESDAY.—2 P.M., Mr. Gibb: Eye Department. 5 P.M., Dr. Owen: Congenital Morbus Cordis.

THURSDAY.—10.30 A.M., Dr. Simson: Gynæcological Demonstration. 5 P.M., Mr. B. Harman: Cataract Operations.

FRIDAY.—2 P.M., Dr. Pritchard: Visit to Medical Wards. 5 P.M., Sir R. Armstrong-Jones: Mental Disease.

SATURDAY.—10 A.M., Dr. A. Saunders: Medical Diseases of Children. 12 noon: Mr. Sinclair: Surgical Anatomy of the Abdomen.

Daily:—10 A.M., Ward Visits. 2 P.M., In-patient and Out-patient Clinics and Operations.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

MONDAY, May 10th.—2.30 P.M., Mr. J. B. Banister: Gynæcological.

TUESDAY.—9.45 A.M., Lieut.-Col. R. H. Elliot: Selected Eye Cases and Operations. 2.15 P.M., Dr. A. J. Whiting: Selected Cases of Heart Disease. 3.15 P.M., Mr. H. Evans: Scrotal Tumours. 4.30 P.M., Lecture:—Mr. H. W. Carson: Surgical Diseases of the Pancreas.

WEDNESDAY.—2.30 P.M., Dr. W. J. Oliver: Dermatological.

THURSDAY.—2.30 P.M., Mr. N. Fleming: Eye Cases. Dr. J. Metcalfe: Radiology.

FRIDAY.—2.30 P.M., Dr. C. G. Sundell: Diseases of Children.

SATURDAY.—3 P.M., Mr. Carson: Selected Surgical Cases.

Daily:—2.30 P.M., Operations, Medical and Surgical Clinics, &c.

KING'S COLLEGE HOSPITAL MEDICAL SCHOOL (UNIVERSITY OF LONDON).

A Course of Post-Graduate Lectures on Syphilis is being given by various members of the staff of King's College Hospital during the present year.

FRIDAY, May 14th.—9.15 P.M., Dr. H. W. Wiltshire: Syphilis in Medical Practice (Cardiovascular).

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton, S.W.

MONDAY, May 10th.—2 P.M., Dr. Melville: X Ray Department.

TUESDAY.—2 P.M., Dr. D. Grant: Throat Department. 2.30 P.M., Demonstration:—Dr. Punch: Cases Simulating Pulmonary Tuberculosis.

WEDNESDAY.—10.30 A.M., Dr. Punch: Demonstration of Museum Specimens. 2 P.M., Dr. Gosse: Cardiographic Department. 2.30 P.M., Demonstration:—Dr. Beaumont: Cases Simulating Pulmonary Tuberculosis.

THURSDAY.—10.30 A.M., Dr. Burrell: Artificial Pneumothorax. 2.30 P.M., Demonstration:—Dr. Burrell: Cases Simulating Pulmonary Tuberculosis.

FRIDAY.—2 P.M., Dr. Melville: X Ray Department. 2.30 P.M., Demonstration:—Dr. Jex-Blake: Cases Suitable for Sanatorium.

SATURDAY.—1 P.M., Dr. Batty Shaw: Special Demonstration in the Out-patient Department.

UNIVERSITY OF LONDON.

Advanced Lectures in Physiology to Students of the University and others interested in the subject.

A Course of Eight Lectures on Nutrition will be given at King's College for Women (Household and Social Science Department), Campden Hill-road, Kensington, W.

MONDAY, May 10th, AND TUESDAY.—5 P.M., Lectures III. and IV.:—Dr. E. Mellanby.

UNIVERSITY COLLEGE (UNIVERSITY OF LONDON) Gower-street, W.C.

WEDNESDAY May 12th.—5.30 P.M., Public Lecture:—Dr. C. Singer: Greek Science and Modern Science: a Comparison and a Contrast.

ROYAL INSTITUTION OF GREAT BRITAIN, Albemarle-street, Piccadilly, W.

FRIDAY, May 14th.—9 P.M., Prof. K. Pearson: Sidelights on the Evolution of Man.

CHADWICK PUBLIC LECTURES, Pathological Lecture Hall, The New Medical Schools, Cambridge.

TUESDAY, May 11th.—5 P.M., Dr. F. G. Crookshank: Man and Disease—III., The Future.—Bacteriology in Medicine and Epidemiology.—Relation of Epidemiology to Sociology.

UNIVERSITY OF SHEFFIELD—FACULTY OF MEDICINE POST-GRADUATE LECTURES, at the Sheffield University, Pathological Museum.

WEDNESDAY, May 12th.—4 P.M., Prof. Connell: Pathology of Everyday Lesions of the Intestine.

MANCHESTER ROYAL INFIRMARY POST-GRADUATE CLINIC.

TUESDAY, May 11th.—4.30 P.M., Lecture:—Dr. D. E. Core: Hysteria and Certain Indications for its Treatment.

SALFORD ROYAL HOSPITAL AND ANCOATS HOSPITAL POST-GRADUATE DEMONSTRATIONS, at the two Hospitals alternately.

THURSDAY, May 13th.—4.30 P.M., Dr. Dyson: Tuberculosis of the Skin. (At Salford Royal Hospital.)

Appointments.

Successful applicants for vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

BOURNE, G., M.B. Lond., M.R.C.P., has been appointed Physician to the East London Hospital for Children, Shadwell.

DYSON, W., O.B.E., M.D., Honorary Dermatologist to the Manchester Royal Infirmary.

HERZFELD, GERTRUDE M. A., M.B., Ch.B., Junior Surgeon to the Edinburgh Hospital for Women and Children.

POLLARD, Sir G. H., M.D. Edin., Clinical Assistant at St. John's Hospital for Diseases of the Skin.

VINING, C. W., M.D., B.S. Lond., M.R.C.P., D.P.H., Assistant Physician in Charge of Children's Department, General Infirmary, Leeds.

Certifying Surgeons under the Factory and Workshop Acts: SPENCE, D. L., M.R.C.S., L.R.C.P. Lond. (Melksham); STEELL, J. W. G., M.R.C.S., L.R.C.P. (Youlgreave); LLOYD, W. A. T., L.S.A. (Llandilo).

Vacancies.

For further information refer to the advertisement columns.

Barnsley, Beckett Hospital.—Jun. H.S. £200.
Battersea Borough Council.—Asst. M.O.H. £700.
Birkenhead Borough Hospital.—Jun. H.S. £200.
Birmingham General Dispensary.—Res. M.O. £400.
Bradford Children's Hospital.—H.S. £180.
Bradford City Education Committee.—Asst. School M.O. £600.
Bury County Borough.—Asst. M.O.H., &c. £600.
Bury St. Edmund's, West Suffolk General Hospital.—Res. H.S. £175.
Buxton, Derbyshire, Devonshire Hospital for Rheumatism and Allied Diseases.—H.P. £250.
Cancer Hospital, Fulham-road, S.W.—Three Anæsthetists.
Canning Town Women's Settlement Hospital, Balaam-street, Plaistow, E.—Hon. Visiting S.
Chester County Asylum.—Third Asst. M.O. £350.
Colchester, Severalls Mental Hospital.—Fourth Asst. M.O. £510.
Colchester, Royal Eastern Counties' Institution for Idiots, Imbeciles, and the Feeble-Minded.—M.O. £300.
Coventry Education Committee.—Two Sch. Dents. £400.
Cupar-Fife, Fife and Kinross Joint Sanatorium Board, Glenlomond Sanatorium.—Asst. Res. M.O. £300.
Derby County Borough.—Asst. Tuberc. O. £500.
Derby, Derbyshire Royal Infirmary.—Oph. H.S. £200.
Dr. Barnardo's Homes, 18-26, Stepney Causeway, E.—Sen. M.O.
Durham University.—Asst. in the Dept. of Bacteriology. £600.
Freemasons Hospital and Nursing Home, 237, Fulham-road, S.W.—Res. M.O. £250.
Galway, University College.—Professorships of Anat. and Phys.
Great Northern Central Hospital, Holloway, N.—H.S. £150.
Greenwich Union Infirmary, Vanbrugh-hill, East Greenwich, S.E.—Asst. Med. Supt. £300.
Guildford, Royal Surrey County Hospital.—Third H.S. £150.
Halifax Royal Infirmary.—H.S. £200.
Hants, Enham Village Centre for Disabled Ex-Service Men, near Andover.—Asst. Med. Director. £500.
Hindley Urban District Council.—M.O.H. and School M.O. £850.
Hull Royal Infirmary.—Senr. H.S. £200. Also Cas. H.S. £150.
Ilford Urban District Council.—Dent. S. £500.
Isle of Wight County Asylum.—Asst. M.O. £300.
King's College Hospital, Denmark Hill, S.E.—Bacteriologist.
Kingston, Ont., Queen's University.—Prof. of Clin. Surgery. $5000. Prof. of Path., Prof. of Anat., and Prof. of Pharm. $3500 each. Prof. of Prev. Med. and Pub. Health. $3000. Asst. Prof. of Phys. $2000.
Leeds City.—Asst. M.O. for Maternity and Child Welfare. £500.
Leeds Public Dispensary.—Res. M.O. £200.
Liverpool, Royal Southern Hospital.—Cas. O. £150.
Liverpool, Stanley Hospital.—H.S.'s. £150.
London Lock Hospital, Dean-street, Oxford-street, W., and 283, Harrow-road, Paddington, W.—Pathologist. £500.
Macclesfield, Cheshire County Asylum, Parkside.—Asst. M.O. £350.
Maidstone, Kent County Ophthalmic Hospital.—H.S. £250.
Manchester, Ancoats Hospital.—Hon. Con. Oph. S. and Hon. P.
Manchester Children's Hospital, Gartside-street, Manchester.—Asst. M.O. £200.
Manchester Hospital for Consumption and Diseases of the Throat and Chest, Bowdon, Cheshire.—Res. M.O. £350.
Manchester Royal Infirmary.—Second H.S. to Special Departments. £25 for first six months and £50 for second.
Manchester, St. Mary's Hospitals for Women and Children.—Two H.S.'s for Maternity Hospital. £100.
Middlesbrough, North Ormesby Hospital.—Asst. H.S. £200.
Middlesbrough, North Riding Infirmary.—Hon. S.
Middlesex County Council.—Female Asst. M.O. £500.
Midlothian, Saughton Hall Private Asylum.—Med. Supt.
Miller General Hospital for South-East London, Greenwich-road, S.E.—Hon. Asst. Ophth. S.
Montrose Royal Asylum.—Asst. M.O. £300.
Newcastle-upon-Tyne, Hospital for Sick Children.—Jun. Res. M.O. £200.
Newcastle-upon-Tyne, Royal Victoria Infirmary.—Anæsth. Also Refractionist. £100.
Norfolk County.—Tuberc. O. £600.
Northampton General Hospital.—H.S. £200.
Norwich, Norfolk and Norwich Hospital.—H.P. and Two H.S.'s. £200.
Nottingham General Hospital.—Cas. H.S. £200.
Oldham Royal Infirmary.—Third H.S. £200.

Portsmouth Royal Hospital.—H.S. £150.
Preston and County of Lancaster Royal Infirmary.—H.S. £180.
Queen Charlotte's Lying-in Hospital, Marylebone-road, N.W.—Asst. Res. M.O. £50.
Queen's Hospital for Children, Hackney-road, Bethnal Green, E.—Hon. Anæsth. £25. Also H.S. £100.
Rochester, Kent, St. Bartholomew's Hospital.—Jun. Res. M.O. £150.
Rotherham Hospital.—Jun. H.S. £150.
Royal Chest Hospital, City-road, E.C.—M.O. in X Ray Dept. 25 gs. Also Clin. Assts. Also H.P. £120.
Royal Ear Hospital, Dean-street, Soho, W.—H.S.
Royal Free Hospital, Gray's Inn-road, W.C.—Sen. Res. M.O. £200. Also Cas. O. £100. Also Two H.S.'s. £50.
St. Mary's Hospital for Women and Children, Plaistow, London, E.—Res. M.O. £200.
St. Peter's Hospital for Stone, &c., Henrietta-street, Covent Garden, W.C.—Jun. H.S. £75.
Seamen's Hospital Society, Hospital for Tropical Diseases, Endsleigh-gardens, N.W.—H.P. £100.
Sheffield Royal Hospital.—Cas. O. and Asst. Cas. O. £150 each.
Sheffield Royal Infirmary.—H.P. and H.S. £150 each.
Sleaford, Kesteven County Asylum, near Sleaford, Lincolnshire.—Asst. M.O. £350.
outhampton County Borough.—Sch. Dent. £500.
South London Hospital for Women, South Side, Clapham Common, S.W.—Female Asst. Path.
Stamford, Rutland, and General Infirmary, Stamford.—H.S. £200.
Stockport Infirmary.—Jun. Res. M.O. £200.
Stroud General Hospital.—H.S. £200.
Surrey Dispensary, Southwark, S.E.—Res. M.O. £300.
Torquay Local Education Authority.—Asst. Sch. M.O. and Deputy M.O.H. £500.
Union of South Africa.—Asst. Health O. £900. Also Two Med. Inspectors, £850 each. Also Asst. Path. £750. Also Government Med. and Port Health O. £750.
University of London, St. Mary's Hospital Medical School.—Univ. Chair of Physiology. £900.
Warwickshire County Council.—Assistant County M.O.H. £500.
Weir Hospital, Grove-road, Balham, S.W.—Res. M.O. £150. Also Hon. Visiting P.'s and S.'s, Radio., and Anæsth.'s.
Wells Asylum, Somerset.—Sen. Asst. M.O. £450.
West Bromwich and District Hospital.—Res. H.S. £200.
West Ham Union.—Two Specialist Consultants. £150.
West London Hospital, Hammersmith, W.—H.P. and H.S. Also Surg. Dent. or Asst. Surg. Dent.
Western Dispensary, 38, Rochester-row, S.W.—Vacancy on Attending Med. Staff.
Whitehaven and West Cumberland Infirmary.—Res. H.S. £180.
Wigan Infirmary.—Senior H.S. £250.
Wolverhampton and Staffordshire General Hospital.—H.S. £200.
Worcester County and City Mental Hospital, Powick.—Jun. Asst. M.O. £300.
Worthing, West Sussex and Chichester Joint Education Committee.—Asst. Sch. M.O. £500.

The Home Secretary gives notice of a vacancy for a Specialist Medical Referee under the Workmen's Compensation Act, 1906, for Ophthalmic cases in County Court Circuit No. 6. Applications should reach the Private Secretary, Home Office, not later than May 26th, 1920.

The Chief Inspector of Factories, Home Office, S.W., gives notice of vacancies for Certifying Surgeons under the Factory and Workshop Acts at Ballindalloch, Cardenden, Ellesmere, and at Leicester (West).

Births, Marriages, and Deaths.

BIRTHS.

ALLEN.—On April 30th, at Upper Richmond-road, Putney, the wife of Captain W. B. Allen, V.C., D.S.O., M.C., R.A.M.C., of a daughter.

CARROLL.—On May 1st, at St. Petersburg-place, W., the wife of Charles Herbert Carroll, M.R.C.S., L.R.C.P., of a daughter.

COX.—On April 30th, at a nursing home, Manchester, the wife of George Lissant Cox, M.D. Cantab., of a daughter.

MCMULLAN.—On April 30th, the wife of George McMullan, M.D., F.R.C.S.E., Wallingford, Berks, of a son.

MAXWELL.—On April 26th, at St. Ann's, Kirkcaldy, N.B., the wife of James Maxwell, M.D., of a daughter.

RAINEY.—On May 2nd, at Wakefield House, Compton-street, Eastbourne, the wife of E. H. Rainey, F.R.C.S., of a daughter.

MARRIAGES.

GOODWIN—ADAMS.—On April 29th, at St. Jude's Church, Southsea, Surgeon Lieutenant-Commander Ernest St. George Sagar Goodwin, M.A., M.B., R.N., to Ida Dorothy, younger daughter of Engineer Captain W. H. Adams, R.N., and Mrs. Adams, of Craneswater-avenue, Southsea.

DEATHS.

SPENCER.—On April 7th, at Eastbourne, John Spencer, L.R.C.P. & L.R.C.S. Ed., L.F.P.S. Glasgow, of 347, High Road, Leyton, Essex, aged 60.

N.B.—A fee of 7s. 6d. is charged for the insertion of Notices of Births, Marriages, and Deaths.

A MATINEE in aid of the Nurses' Home Fund of the Great Northern Hospital, Holloway, will be held at the Palladium on Friday, May 14th, at 2.30 P.M. Her Majesty Queen Alexandra has expressed her hope of being present. Tickets may be obtained from the secretary of the hospital.

BOOKS, ETC., RECEIVED.

BELL, G., AND SONS, LTD., London.
The British System of Physical Education. A practical text-book for teachers. By Beatrice E. Bear, co-Principal of Queen Alexandra's House Physical Training College. With Foreword by Sir James Crichton-Browne, M.D., LL.D., F.R.S. Pp. 128. 8s. 6d.

BLACK, A. AND C., London.
Advice to Consumptives: Home Treatment, After-care, and Prevention. By Noel D. Bardswell, M.D. Foreword by the late Dr. C. Theodore Williams. Pp. 153. 3s. 6d.

HODDER AND STOUGHTON, London.
The New Children. Talks with Dr. Maria Montessori. By Sheila Radice. Pp. 170. 4s.

HOEBER, PAUL B., New York.
Education in War and Peace. By Stewart Paton, M.D. Pp. 116. $1.50.
Aphasia and Associated Speech Problems. By M. Osnato, M.D. Pp. 191. $2.50.
Rambling Recollections: An Autobiography. By A. D. Rockwell, M.D. Pp. 350. $4.00.

LIVRARIA ECONOMICA, Curityba, Paraná, Brazil.
A Prophylaxia Rural no Estado do Paraná. Esboço de geographia medica. By Dr. H. C. de S. Araujo. Pp. 335.

MODERN PRINTING COMPANY, Melbourne.
Lectures to Students on Diphtheria, Measles, Scarlatina. By F. V. G. Scholes, M.D., D.P.H. Pp. 236.

SAUNDERS, W. B., COMPANY, LTD., London and Philadelphia.
A Manual of Obstetrics. By John Cooke Hirst, M.D., Obstetrician and Gynæcologist to the Philadelphia General Hospital. Pp. 516. 14s.

URBAN AND SCHWARZENBERG, Berlin and Vienna.
Aus 25 Jahren Orthopädischer Arbeit Eine therapeutische Orientierung für praktischen Arzt. Von Prof. Dr. O. Vulpius. Pp. 80. M. 12.

WRIGHT, JOHN, AND SONS, Bristol.
Electric Ionization: A Practical Introduction to Its Use in Surgery. By A. R. Friel, M.D., F.R.C.S.I. Pp. 78. 8s.

Communications, Letters, &c., to the Editor have been received from—

A.—*Answers*, Lond., Editor of; Dr. W. Allingham, Orsett; Messrs. Allen and Hanburys, Lond.

B.—Dr. E. Bramwell, Edinburgh; Mrs. A. Barnes, Liverpool; British Commercial Gas Association, Lond.; Messrs. Baillière, Tindall, and Cox, Lond.; Prof. W. B. Bell, Malvern; Dr. C. L. Browne, South Mimms; Mr. H. A. Barker, Lond.; Dr. W. H. Broad, Liverpool; Dr. J. W. Bride, Manchester; Dr. C. F. Bailey, Brighton; Dr. C. Banks, Stafford; Board of Education, Lond.; British Colloids, Lond.; British Italian Commercial Association, Lond.

C.—Clerical, Medical, and General Life Assurance Society, Lond.; Council of British Ophthalmology, Lond., Hon. Sec. of; China Continuation Committee, Shanghai; Mr. F. R. Cave, Bath; Dr. E. F. Cyriax, Lond.; Prof. E. L. Collis, Cardiff; Dr. A. Chaplin, Lond.; Dr. D. E. Core, Manchester; Chicago School of Sanitary Instruction; Dr. C. W. Chapman, Lond.; Dr. C. Coombs, Bristol.

D.—Dr. T. B. Davies, Lond.; Dr. D. Dougal, Manchester; Dept. of Scientific and Industrial Research, Lond.; Dr. H. H. Dale, Lond.

E.—Dr. G. S. Earl, Plymouth; Dr. J. I. Enright, Liverpool; Major-Gen. Sir George Evatt, Lond.; Dr. A. R. Elliott, Lond.

F.—Friends' Emergency War Victims Relief Committee, Lond.; Food Reform Society, Lond., Hon. Sec. of; Major H. French, Lond.; Major E. G. Ffrench, Lond.

G.—Mr. W. B. Gabriel, Lond.; *Glazo Gazette*, Lond.; Great Northern Central Hospital, Lond.

H.—Dr. R. C. Holt, Didsbury; Mr. W. H. Hatcher, Swansea; Mr. C. A. Hoeffteke, Lond.

I.—Illuminating Engineering Society, Lond.

K.—King's College Hospital Medical School, Lond., Sec. of; Dr. W. H. Kesteven, Kingston; King Edward's Hospital Fund for London, Hon. Sec. of.

L.—Dr. C. E. Lakin, Lond.; Dr. J. Lipsey, Glasgow; Dr. G. Lambert, Reading; Messrs. Longmans, Green, and Co., Lond.; Dr. L. R. Lempriere, Hertford; London School of Tropical Medicine, Sec. of; Dr. A. de Llamas, Corrientes; London (Royal Free Hospital) School of Medicine for Women.

M.—Ministry of Health, Lond.; Mrs. M. McConnel, Petersfield; Medical Research Committee, Lond.; Dr. H. L. Murray, Lond.; Medical Society of London; Dr. Mitterstiller, Innsbruck; Dr. P. H. Manson-Bahr, Lond.; Dr. W. A. Milligan, Lond.; Dr. R. Morton, Lond.; Ministry of Pensions, Lond.

N.—Dr. J. A. Nixon, Clifton; National Health Week Council, Lond., Chairman of; National Health Society, Lond., Sec. of; National Baby Week Council, Lond.; Mr. R. J. Norris-Cane, Lond.

P.—People's League of Health, Lond.; Dr. J. Parkinson, Lond.; Sir A. Pearson, Lond.

R.—Mr. W. Rice, Lond.; Lieut.-Col. Sir Leonard Rogers, Lond.; Royal Mail Steam Packet Co., Lond.; Royal Society, Lond.; Royal Society of Arts, Lond.; Mr. J. E. H. Roberts, Lond.; Royal College of Physicians of London, President and Fellows of; Royal Institution of Great Britain, Lond.; Dr. A. S. Russell, Lond.

S.—Prof. W. Stirling, Manchester; Dr. D. P. Sutherland, Manchester; Society of Tropical Medicine and Hygiene, Lond.; Society for the Prevention of Venereal Disease, Lond.; Save the Children Fund, Lond.; Dr. A. G. Shera, Eastbourne; Dr. E. F. Skinner, Sheffield; School Dentists' Society Lond.; Société des Sciences Médicales de Montpellier; Scottish Board of Health, Edinburgh.

T.—Dr. A. H. Thompson, Lond.

U.—University of London.

W.—Dr. F. J. Waldo, Lond.; Miss J. Weir, Killybegs; Capt. E. J. Wyler, R.A.M.C.; West London Medico-Chirurgical Society; West London Hospital Post-Graduate College; Dr. F. J. Wethered, Falmouth; Sir G. S. Woodhead, Cambridge; Dr. L. Williams, Lond.

Y.—Dr. R. A. Young, Lond.

Notes, Short Comments, and Answers to Correspondents.

THE INDUSTRIAL SETTLEMENT FOR THE CONSUMPTIVE.

BY P. C. VARRIER-JONES, M.A. CANTAB., M.R.C.S., L.R.C.P. LOND.,
HONORARY MEDICAL OFFICER, PAPWORTH COLONY, CAMBRIDGE;
AND
SIR G. SIMS WOODHEAD, K.B.E., V.D., M.D., LL.D.,
PROFESSOR OF PATHOLOGY, UNIVERSITY OF CAMBRIDGE;
FELLOW OF TRINITY HALL, CAMBRIDGE.

THE earlier conception of colonies for tuberculous subjects was associated with little more than the prolongation of the period of treatment of the individual. The newer conception of the duties of after-care and colony committees is based on the inclusion of the idea of partial if not complete separation or segregation of the tuberculous patient. The colony idea, then, at first at any rate, connoted no thought for the welfare of the community; it was concerned merely with assuring the benefit of the sick individual.

Communities for the tuberculous will not, however, be such artificial and involuntary segregated bodies as some people would have us believe. Indeed, the village settlement has a two-fold justification. It not only offers employment to those who cannot be employed elsewhere, but it affords them relief from the economic pressure of the outside world. Why do we healthy subjects live and work in the environment in which we happen to find ourselves? Unless we are wealthy aristocrats we, all of us, have to work and live where we can earn our living; similarly it will be found that the consumptive will live and work where conditions are favourable for him. It must be clearly understood, however, that the founding of such a community is a problem not so simple as it sounds. Any fantastic idea of acquiring a large tract of land and sending consumptives to live there and fend for themselves as best they can is doomed to failure from the outset. It is only by the most gradual steps that such a community can be brought into being and developed.

An Industry for Consumptives.

Here we open up new ground and put forward a new idea to which the individual and the national mind will turn and readjust itself. Just as the well-to-do seek special places and climates for the benefit of their health, so—we must get accustomed to the idea—those not so well endowed with worldly gear may with equal propriety seek some place best suited for the prolongation of their life under the most favourable conditions. The only difference is one of "exchange" and economics. To provide the rich patient with the wherewithal to give in exchange for the amenities of life others work or have worked, while the man ordinarily dependent on his own exertion, having no one to work for him, must himself continue to work. He also can exchange the results of labour—his own—into food and comforts for himself and his family, even if he cannot provide for them completely. The village community, or industrial settlement—whatever it is called—is designed to provide the opportunity for such exchange.

Since a village community cannot be called into being by a stroke of the pen, it is necessary to build it up gradually and quietly from the materials ready to hand. Towns and villages are generally called into being by the influx of inhabitants seeking food and work. An industry is started, it matters not what; a population immediately follows and congregates around it. The people are there for the benefit of the industry, not the industry for the benefit of the people. Why not, whilst following the usual plan as regards the first part of the process, reverse the second and, founding an industry, run it for the benefit of the people? Set up your industry and the people will flock to it, but in this instance let the industry be set up for consumptives, let it be run for their particular and special benefit, and they will come—and stay.

The Principle Involved.

Such is the process, a perfectly rational and feasible one, of starting a community for consumptives. The starting of an institution is quite a different matter—the latter is artificial, the crowding together of members of one sex—relieving them of all sense of responsibility and of proportion. Men or women remaining for long under an institutional regime are left in conditions in which they lose interest in life and become dependent on others for moral support. A village community must not be a collection of almshouses, filled with pensioners spending their last years dependent on the charity of others. That is quite unnecessary, for these colonists or settlers are neither old nor infirm. Their strength is certainly diminished and their health impaired, but with encouragement and opportunity, both of which should be freely given, they will be able to contribute very materially to their own support and that of their families. The opportunity to work is what is required, and their earnings, together with a small pension, will in most cases enable them to become self-supporting, certainly to a much greater extent than were they compelled to enter into competition with the healthy worker in the outside world. All the artificial helps and make-believes of an institution should be avoided. Full liberty of conscience and action must be given, and also guidance and help in the art of becoming as fully self-supporting as possible. The sapping of the moral character of the man by gifts and doles should be carefully avoided. The settler must realise that he lives in a world of realities; that there is still a struggle for existence, even if the external winds and conditions are tempered to the shorn lamb. The remaining fraction of the struggle we would certainly not do away with, for it is no less valuable, nay necessary, for the formation of character than is the struggle for existence in the outside world. Suitable work is by no means an unimportant factor in the treatment of the consumptive; indeed, it must be looked upon as the central pivot of the whole system. It is, however, the focal point of great and numerous difficulties. To obtain food a man must work, unless another comes to his assistance. In order, therefore, that a consumptive may live he should also work, and this he can do if he be given the opportunity and conditions in which to perform the selected tasks allotted to him. There is in the consumptive a potential, though a limited, source of energy. That energy can now be made available under known and well-defined conditions. Now by continuous observation and research and by a study of various industries, the kind of work and the hours worked, a knowledge of the conditions of work desirable for a consumptive has been arrived at. The problem therefore resolves itself into the practicability or otherwise of setting up industries which, when run by consumptive labour, can be made to return a remunerative rate of wages. Can any means be found whereby the produce of such industry can compete in the ordinary market, for unless a market can be found disaster must quickly ensue. Our outlook must therefore be much wider than that of employing men at a simple occupation at which a little money can be earned. The greater the wages earned the better the financial position of the consumptive settlers, the less will be the call upon charity or the State for their upkeep. The greater the proportion of earnings to the subsidy the greater also will be the man's own self-respect. We must clearly keep in view the important problem of permanent, remunerative industry; playing at a trade must not be countenanced under any circumstances.

The Training of the Industrial Worker.

The days of the old craft guilds have unfortunately passed away. In those days a man was a skilled craftsman, and turned out an article at which he had worked from start to finish. To-day there is no market for the product of such craftsmanship. The machine has revolutionised man's work, and without its aid this work is no longer remunerative. We have only to question the great bulk of the working men of to-day as to their occupation to learn that they are machinists. For the most part there is no special skill required for the job. It is astonishing how completely the workman's faculties may lie dormant during most of the operations called for from the machinist; and to this the unrest of the present day may in some measure be attributed. We educate a man's faculties up to a point; we then allow him to go through life without calling for their use. It is obvious then that when we talk about training a man to be this or that kind of skilled artisan or craftsman, we are literally talking folly, though we may not always realise the fact. In the factories in large centres, except in the case of the "key men," thorough training does not exist, and, in the sense we know it, is never called for. A man is set to look after a machine, and for this little technical training or skill is needed, and the instructions given to him are brief and the directions simple. The machine does the work; all the man does or has to do is to set the pace. Such, in brief, is the environment from which, for the most part, our patients come, and their diminished powers have to be readjusted to their new surroundings. We have no alternative but to take as our model the normal industrial world, even though we may have to modify it in certain details. We must eliminate certain factors, which would inevitably make for disaster to the consumptive. All isolated efforts of training, we are convinced, must inevitably prove futile. Individual labour cannot ensure a turnover by means of which the consumptive can compete with the healthy labour of the modern factory; unless we can get a large turnover we cannot provide a remunerative wage. But though the attempt to earn a good wage in the open market

involves disability and death to the consumptive, we can modify methods and provide special conditions wherein the profits are used to increase his pay. We believe that with perseverance success may be attained in this difficult task even for large numbers. We have, indeed, proved it among small numbers. We had first to realise that the working man of to-day has to be trained in the majority of cases, not as the master of a trade but as a hand in a factory. Having realised this, our task was greatly simplified. It amounted to training him to be a hand. Fortunately he wants nothing more to enable him to earn his living, for our difficulties would certainly be infinitely greater were it necessary to teach each man a skilled trade. As our community grows, however, we have room for another class of worker—the consumptive who is already skilled and who desires other environments and another position. Such an one can always be accommodated in the settlement and his advent is hailed with delight by the colony authorities; for, just as the factories in the outside world employ men in special offices and lay positions, so also the consumptive community has room and employment for all of them. One trade sets in motion another, subsidiary branches soon give evidence of sprouting, and within a short time an office staff is required and develops; a packing department and a designing shop become necessary and make their appearance, and, one after the other, various side lines spring up. It is the knowledge that the concern is alive and progressing, that it can and will employ its hands permanently, that makes for the contentment of mind of the consumptive village settler. The life he leads is as near as possible to the old one to which he had become accustomed. The weekly wage is earned and regularly paid and, finding it possible to live decently and without running into debt, the colonist settles down just as he would have done had he migrated voluntarily from one regular centre of industry to another.

It must not be supposed, however, that a tuberculous community is in all respects like a community of healthy persons. From the psychological point of view the two are very different, and this difference is most marked in the "minor matters of the law." Whether we are brought into closer contact with the workers and their families than would normally be the case in an ordinary community, it is impossible to determine, but on the whole small domestic trials appear to affect the mental outlook of the consumptive to a much greater extent than they affect that of normal individuals. The exaggerated care they take of their health is very evident even to the casual observer. They will run no risks. These characteristics alone supply almost convincing evidence that the results of treatment and residence in a settlement should be infinitely more satisfactory than a system in which patients, after a short residence at a sanatorium, return to their former surroundings.

The Family of the Consumptive.

It may be, indeed it has been, suggested that the village settlement is an expensive method of attaining an end that might be achieved by simpler and less costly means. Is it not possible, it is asked, and would it not be equally effective, to provide workshops in town where, under a special arrangement, these consumptives may work and earn their living? Emphatically, No! The village settlement does much more than provide a job for the consumptive; it also makes provision for his family to be reared in healthy surroundings and under such favourable conditions that their resisting powers may be built up and maintained. At first sight it is not quite evident why this should be the case, for it might appear that to bring a healthy family into a village in which there are more consumptives than are found in an average normal village must increase the risk of infection to the healthy. On consideration, however, this argument is found not to be valid. Let us, for a moment, picture the life and surroundings of a typical and failing consumptive in a town. His working hours being cut down, his wage is also reduced; it follows that the total amount available for the purchase of food for the family is correspondingly low; consequently, the family are underfed, badly clothed, and live in a low-rented house in a poor neighbourhood. The facile descent of the consumptive working man down the social scale is well known, and if lowered resistance plays any part in infection, the members of the family of such a man are in an all too favourable position to contract an infective disease. We have present the two essentials for infection: (1) Lowered resistance due to the economic straits to which the family has been reduced; (2) the massive dose of infective material available and active—this latter the outcome of bad housing conditions. Neither of these factors is of and by itself responsible for the spread of the disease, but there is a vicious circle set up. How complete is the reversal of this picture at the colony. The man receives a wage which, together with the subsidy, enables him to obtain an ample food-supply for his wife and family. He is instructed how to deal with the infective agent—the sputum; he occupies a house in which there is some possibility of conforming to hygienic laws. The children enjoy the inestimable advantage of good playing fields instead of a dirty street.

Conclusion.

The reason for the advocacy of village settlements is two-fold: (1) The prolongation of the life of the consumptive without increasing the infectivity of the case (the probability is that the infectivity will be very much decreased, but proof of this is at the moment wanting); (2) the healthy rearing of the next generation and the production in its members of increased resistance against the disease. These objects obviously cannot be attained by the mere provision of workshops for consumptives near towns even if the labour be subsidised. Indeed, such a method would seem to put a premium on infection. It would serve no useful purpose; it would conduce neither to the arrest of the disease nor the prevention of the spread of infection. All the adverse conditions of the infected worker's home life would be ignored and subsidised labour of an infective nature, with all its dangers to the community, would be allowed to wander at will through out towns.

The village settlement would provide decent conditions for the families of consumptives, and, on the other hand, a hospital for the most advanced cases.

Of all the departments of the colony none is more successful from the humanitarian point of view, none more advantageous to the general community than the section set aside for those suffering from advanced tuberculous lung disease. The cry of those who condemned the admission of advanced cases to a colony is drowned, and for ever; the complete success of the measure is assured. The grisly idea of a "home for the dying" is relegated to the past. The "hope" of the consumptive is encouraged to the end, the encouragement taking the extremely practical form of allowing him to observe other consumptives in the various stages of convalescence. The chances of getting better are always before his mind. And the effect on the minds of those who are comparatively well is exactly the same as on our own. "The other fellow has it, not I," and in this may be summed up the whole psychology of the position. Not necessarily side by side, but under specially defined conditions, all stages of tuberculosis can be accommodated on the same estate. It is an enormous advantage that it should be so; it has simplified the machinery of running the various institutions which are now considered necessary for the treatment of the disease. Moreover, it has simplified to an equal extent the running of the industrial settlement.

Village settlements when formed will differ from each other in a thousand ways. The industries carried on cannot always be the same, and the types of inhabitants will differ in different areas. It is impossible to sketch any hard-and-fast plan. The only matter of importance is that the principles laid down should be grasped and followed; a newer and fuller opportunity will then be offered both to the consumptive and the community for a beneficial readjustment of their mutual relations.

CLEAN CUPS IN THE NAVY.

THE Admiralty is, we are glad to see, arranging that in future all glasses, cups, and tumblers used in naval canteens are to be disinfected in boiling water as soon as they have been drunk out of. This follows on the decision to secure disinfection afloat that we mentioned in our issue of Oct. 11th, 1919 (p. 672), and should materially reduce the incidence of sputum-borne infections in the naval service.

PUBLIC HEALTH IN BRITISH HONDURAS.

THE estimated mean population for the year 1918 was 43,368. The birth-rate was 41·252 and the mortality 49·368 per 1000 of the estimated population. The excess of deaths over births was 342. The number of illegitimate births was 702 out of a total of 1799, or 39·02 per cent. With most other places in the world the colony suffered in 1918 from a severe influenza epidemic. Great distress and suffering prevailed. Whole families, especially among the Indian villages, were practically wiped out. In many cases no nurses or doctors could be obtained to visit the sick. Splendid work was done by private individuals in assisting the Government to deal with the situation. The death of Dr. Winter was due in a measure to his self-sacrificing and unsparing efforts to attend to the sick after he himself was attacked by the disease. Vigorous steps to reduce the prevalence of hookworm, which, with malaria, saps the vitality of the people in tropical countries to such an alarming extent, especially among the Indians, were carried out by the medical department with favourable results. Rain fell on 186 days in the year in Belize and amounted to 64·66 inches. The daily average number of patients under treatment and care was: in the Belize Hospital, 46·03; in Corozal Hospital, 8·62; in Orange Walk Hospital, 5·81; in Stann Creek Hospital, 4·85; in Toledo Hospital, 6·73; in the Lunatic Asylum, Belize, 66·04; in the Poor House, Belize, 49·25.